



NetworkWorld

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Joe Inzerillo, CTO of Chicago's United Center, says Linux helps professional sports teams that use the facility.

TODD ROSENBERG

Enterprise endgame

■ BY DENI CONNOR

Linux proponents say the technology can help large businesses do just about anything — even aid professional athletes win championships.

At least that's what Joe Inzerillo, CTO for Chicago's United Center, hopes. He has installed a Linux-based real-time video system that the coaches for the Bulls basketball and Blackhawks hockey teams use to analyze the strengths and weaknesses of rivals.

"When you look at the resources and what you are doing with them, it's clear that the Linux decisions we've made have let us do a whole lot more with a whole lot less," Inzerillo says.

In this, the second of our two-part look at Linux and open source software in corporations, users say Linux lets them deploy stable, reli-

See Evolution, page 16

■ For more Linux news, see page 12.

**Open Source
Evolution**
Second in a two-part series

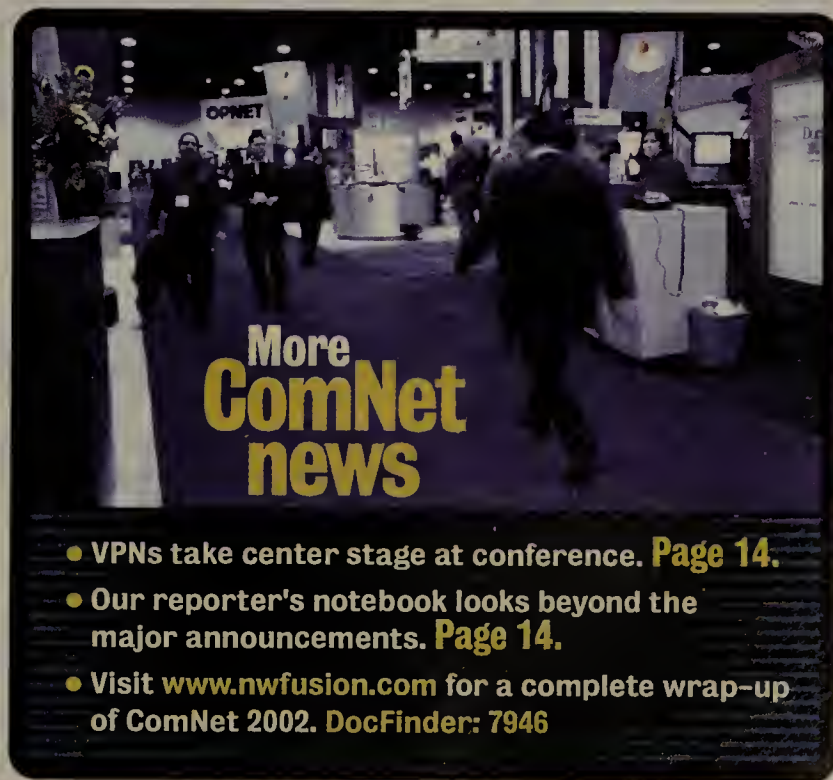
WorldCom set for VoIP push

■ BY DENISE PAPPALARDO

WorldCom is juicing up its voice-over-IP service to offer voice and data network convergence to the desktop, a move that could result in significant customer cost savings.

The service provider plans to provide support for native Session Initiation Protocol (SIP) to the desktop for its IP Communications service customers next month. The enhancement will let users plug Cisco or Pingtel SIP desktop telephones directly into their LANs, eliminating the need for separate voice and data networks. WorldCom also expects to extend the reach of its IP Communications service to managed IP VPN, dedicated

See VoIP, page 72



- VPNs take center stage at conference. **Page 14.**
- Our reporter's notebook looks beyond the major announcements. **Page 14.**
- Visit www.nwfusion.com for a complete wrap-up of ComNet 2002. **DocFinder: 7946**

STAN BAROUH

Novell raising security profile

■ BY DENI CONNOR

PROVO, UTAH — CEO Jack Messman wants Novell to be known for its security offerings, which means a team of developers has been hired to rescue the company's dormant BorderManager product from the scrap heap and enhance its other authentication and access software.

While the move has customers applauding, industry experts

question whether Novell can compete head-to-head with more established security leaders.

The struggling network vendor shelved BorderManager last year to the chagrin of users who say the Internet access and authentication product, though miserably outdated, is one of the best. Novell will release a new version of BorderManager in April the company says will revitalizes the product — last revised in 1999 —

and make it a linchpin of the company's security suite that was released last month.

This bundle, called Secure Access, provides single sign-on capabilities, user authorization and authentication to applications, databases and platforms. The bundle includes six other products: SecureLogin, iChain, eDirectory, Novell Modular Authentication Services (NMAS), No-

See BorderManager, page 73



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NetworkWorld



JOHN HERSEY

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Forums

AT&T and home networking

Net.Worker Managing Editor Toni Kistner asks, "Why should anyone pay a monthly fee to network when network address translation lets you do it for free?" Our readers express their views. **DocFinder: 7936**

Reviews

Cool Tools

Cool Tools Editor Keith Shaw offers an exclusive online-only end-user review of Handspring's new Treo PDA/phone. **DocFinder: 7933**

Top ISP Report

With the help of eTesting Labs, we rank the top ISPs in the business-to-business, national and regional categories. **DocFinder: 7937**

Research

Web services/XML

Web services are made possible by increasingly less expensive bandwidth and storage as well as growing demand for more dynamic content. This research page includes tutorials, primers and glossaries on emerging standards such as XML, SOAP, WSDL and UDDI. **DocFinder: 7947**

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Features

Buyer's Guide: Vulnerability-assessment tools

We test eight products that scan your network and find the security holes before the bad guys do. **Page 52.**

Vulnerability-assessment service providers

If you're looking for vulnerability-assessment service providers, we've got that covered, too. **Page 56.**

Top ISP Report

Check out how well your ISP measured up, based on December performance rates. **Page 58.**

Columnists

Compendium

Pointing to porn
Fusion Executive Editor Adam Gaffin and Technologist Adam Levine find that pornmeisters buying up the URLs of dead Web sites is a growing trend. **DocFinder: 7938**

Keeping Current

Enron auditors
Fusion Columnist Fred McClimans writes: "I am surprised about the blatant disregard for upstanding business practices by a select group of Arthur Andersen partners." **DocFinder: 7939**

View From The Edge

Not so SuperNet
Edge Managing Editor Jim Duffy is concerned that the Zombie-like SuperNet 2002 conference in Santa Clara indicates the industry needs to be grabbed by the collar and shaken awake. **DocFinder: 7940**

Events

Performance and availability mgmt.

This seminar shows you how to figure out your network's return on investment. **DocFinder: 7941**

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News

Bits

Aprisma to leave Enterasys nest

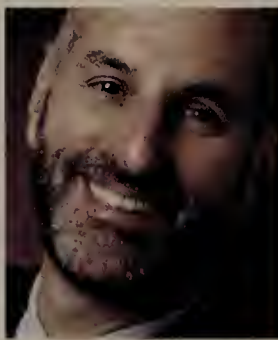
■ Aprisma Management Technologies, the network management software arm of now-defunct Cabletron, will become an independent company this month. For the past year, Aprisma has been operating as an independent arm of switchmaker Enterasys, which itself was spun out of Cabletron. Enterasys last week announced it has set Feb. 13 as the date for distribution of Aprisma common stock. Feb. 5 will be the record date for the distribution. Aprisma officials say the company's independence will give customers more confidence that Aprisma software will work with hardware from Enterasys competitors such as Foundry Networks, Juniper Networks and Extreme Networks.

Netscape flags Navigator flaw

■ A security flaw in Netscape's Navigator Web browser can let malicious Web site operators view the information stored in cookies on a user's computer, according to a security note published on Netscape's Web site. The vulnerability affects Navigator versions 6 through 6.2, Version 0.9.6 and earlier versions of Mozilla, the open source version of Navigator. The bug can be exploited by causing users to visit a Web address inserted into HTML code on a Web page or in an HTML-formatted e-mail. If the user were to view the malicious Web site, cookies could be stolen off the user's computer. Netscape urges users of Navigator 6 through 6.2 to upgrade to Version 6.2.1, which does not contain the flaw. Mozilla users should upgrade to Version 0.9.7.

Adobe to buy e-forms vendor Accelio

■ Software maker Adobe Systems has agreed to purchase Canadian electronic-forms software and service provider Accelio in an all-stock deal valued at \$72 million, the companies announced Friday. "This acquisition quickly positions Adobe as a leader of business-process solutions, which is the logical next step in the evolution of our ePaper platform. The combined companies can supply our customers with complete end-to-end e-forms solutions," said Bruce Chizen, CEO of Adobe. Accelio, launched in 1982, has 650 employees and 7,000 customers worldwide in the financial services, banking, manufacturing, utilities and public service sectors. Accelio has customers in more than 50 countries around the world, including Microsoft, Citigroup's Citibank, American Express and 70% of the Fortune 100 companies, according to the company's Web site.



Adobe CEO Bruce Chizen

Ellison: Oracle making leap to Linux

■ Oracle is about to replace three Unix servers that run the bulk of its business applications with a cluster of Intel servers running Linux, CEO Larry Ellison said last week. He also predicted the "inevitable" demise of large server systems, exposing a potential conflict of interest with longtime ally Sun. The Oracle chief made these comments while touting the benefits of Oracle's clustering technology to an audience of financial analysts. Instead of upgrading three of its older Hewlett-Packard Unix servers, Oracle will move its application server and business software to Linux-based Intel machines later this year, Ellison said. "We'll be on Linux no later than the summer, so we'll be running our whole business on Linux," he said.

The Good The Bad The Ugly



IBM made it official last week: Big Blue lifer Sam Palmisano will take over the CEO reins from Lou Gerstner on March 1. While Gerstner has had his share of success at the company, the time is right for a change and Palmisano looks to be well-qualified to take over.



Verizon Co-CEO Ivan Seidenberg said last week that broadband services have come a long way but that the industry is still not doing a good job of making services accessible to the masses. "Forty percent of homes don't have a broadband choice, and only 6% of small businesses have broadband access," he said. ➤



Bankruptcy courts got even more packed last week, with service providers Global Crossing and McLeodUSA filing for Chapter 11 protection. Hey, maybe there really is a bandwidth glut after all?



PHIL DISLEY

Microsoft hires Charney to head security

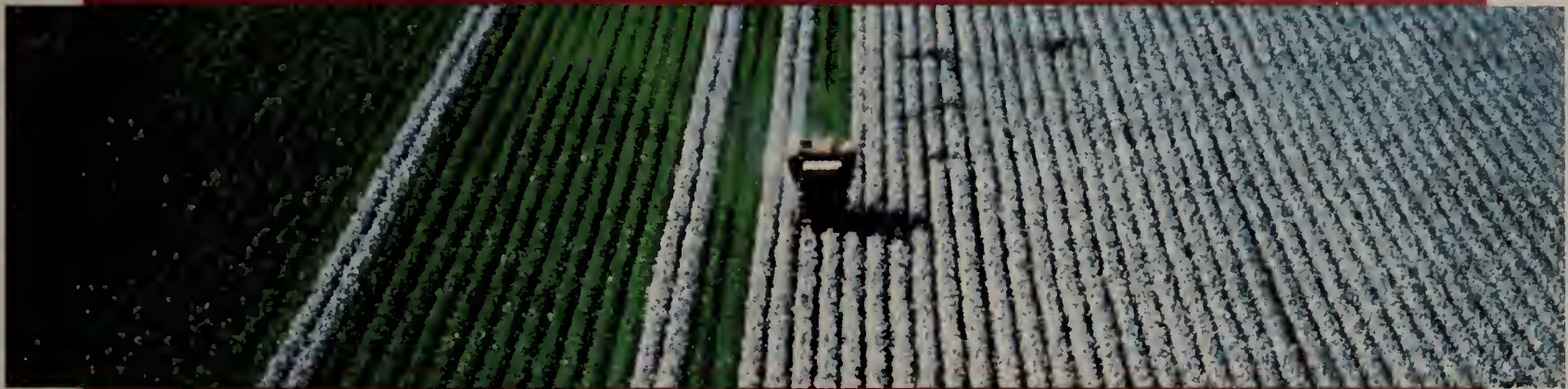
■ Scott Charney, a partner at PricewaterhouseCoopers in New York and former chief of computer crime at the U.S. Department of Justice, has accepted the post of chief security strategist at Microsoft. Charney takes over the position left vacant by Howard Schmidt, who departed Jan. 28 to join the Bush administration's infrastructure security program. Charney joins Microsoft in the wake of a conspicuous internal push by company Chairman Bill Gates to reemphasize what he calls "trustworthy computing."

AT&T Wireless, AOL become 'buddies'

■ AT&T Wireless Services customers now can yap and trade instant messages over their mobile phones thanks to an agreement between the carrier and AOL Time Warner that offers AOL's AIM instant messaging service to AT&T customers who have phones with standard text messaging features. The agreement could benefit millions of AT&T Wireless and AOL customers, letting them chat and see whom of their "buddies" is online. Although AIM is free, customers interested in using the instant-messaging service over their AT&T Wireless phones would have to pay the carrier's text messaging fees of 10 cents per outgoing message and no monthly charge, or \$5 per month for 100 outgoing messages and 10 cents per message thereafter.

SEC sets up phony site as warning to investors

■ The Securities and Exchange Commission is creating a series of Web sites appearing to offer fantastic investment opportunities, similar to those that con artists create, only to warn anyone foolish enough to consider investing of the dangers involved. The SEC recently launched a Web site for a fictitious company called McWhortle Enterprises that introduces the "established and well-known manufacturer of biological defense mechanisms" and its new product, a "Bio-Hazard Alert Detector" that "emits an audible beep and flashes when in the presence of all known biohazards." Readers are invited to invest, with a promise of gains of more than 400% in three months and are asked to provide credit card details and a Social Security number "for identification purposes." People who take the bait and click on a link are led to a page warning them about rip-offs and urging them to do their homework before investing.



AGRICULTURAL PRODUCTION: AUTOMATED IN 1793



MANUFACTURING: AUTOMATED IN 1913



THE CORPORATE DATA CENTER: AUTOMATED IN 2002

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Lotus' Domino plans disappoint customers

Garnet technology yanked from Domino 6 to avoid competing with Java features in WebSphere.

■ BY JOHN FONTANA

ORLANDO — Lotus last week stunned customers by pulling a key piece of technology from the forthcoming release of Domino, igniting a backlash by users who questioned the future of the product as a Web-based development platform.

After Lotusphere attendees first warmed to Lotus' plans for Domino to become a set of collaboration components that run on Java 2 Platform Enterprise Edition (J2EE), they were fed a bitter pill when the company pulled key Java technology, called Garnet, from the forthcoming Domino 6 package.

Garnet, under development for more than a year, supplied support for Java Server Pages (JSP) in Domino. Support for JSP, a simple programming mechanism for displaying dynamic content on a Web page, was to provide a bridge into the J2EE development world without having to purchase and deploy a full-blown J2EE server, such as IBM's WebSphere.

"This would have made Domino even more viable as an 'all-in-one integrated platform,' very coherent and low-cost compared to 'classic' J2EE solutions involving WebSphere and DB2 that require many different people and skills," says Pejman Parandi, a senior Web developer who asked that his company not be identified.

But IBM is no longer interested in an all-in-one platform, Parandi says, and it killed Garnet to avoid competing with J2EE support in WebSphere.

Garnet, which is in the current

Ins and outs

Lotus has pulled some of its Java technology out of the next release of Domino, but other features still remain.

In: J2EE support

- ✓ Bundled WebSphere App Server 4.x (developer version)
- ✓ JSP tag library
- ✓ Hardened Java APIs
- ✓ Web distributed authoring and versioning
- ✓ Multiple HTTP stacks (Apache, IIS, iPlanet)
- ✓ Increased testing against WebSphere
- ✓ Single sign-on via lightweight third-party authentication with WebSphere app server

Out: Garnet J2EE platform

- ✗ Embedded J2EE server (the R5 servlet engine is retained for backward compatibility)
- ✗ JSP and servlet editing in designer
- ✗ JSPs in LotusScript

beta versions of Domino 6, isn't scheduled for inclusion in the next beta that ships this month.

IBM officials say they realized Garnet wasn't complete enough to be a pure standards technology and that it actually represented a risk to positioning Domino as a set of collaboration components for what Lotus and others are calling "contextual

collaboration" (see The Scoop, this page) — the ability to integrate collaboration support into business-process applications.

But Lotus has been testing Garnet for nearly a year, so its demise caused surprise and disappointment.

"When they showed the JSP engine for Domino [Garnet] last year, I thought Domino is the Web platform I will go forward with," says Doug Hayden, IT project manager for furniture maker Herman Miller in Zeeland, Mich. "I'm on board with the other changes, but I am disappointed they pulled the JSP engine. I don't need WebSphere. I look at it as another platform that I would have to learn, so I thought it was great that I had what I needed in Domino."

Big Blue's strategy

IBM is signaling clearly that Domino will become a set of collaborative components for J2EE developers to add to applications that run on IBM's WebSphere server and IBM's Web services platform, which now includes the DB2 database and Tivoli Systems management wares.

"There is no question that the long-term IBM strategy is to use Domino to sell more infrastructure components like WebSphere, DB2 and Tivoli," says Matt Cain, an analyst with the Meta Group. "This is going to be a tumultuous time for IBM/Lotus as they rationalize what is Domino."

Some say the tumultuous times have already started.

"It was nice to see Lotus get the Web standards for Web application development into Domino, but now they are saying forget it," says Edward Rabinovich, associate director of planning and architecture for Ernst and Young in Cleveland. "Domino now becomes a set of classes you call from WebSphere. It all means more money, more training and more infrastructure."

Some view the elimination of Garnet as such a blow to Domino that one contributor to a discussion list on the Notes.Net Web site suggested Domino 6 be renamed "Domino Edsel." Others suggested that Domino will become just another mail server; is

now on a path to irrelevance; and that they will begin shopping for another Java server platform.

Lotus officials reacted by posting an explanation of the Garnet decision and a frequently asked questions section titled "Next Generation Collaboration Strategy" after the negative tone permeated the Notes.Net site.

"Building parallel infrastructure

in Domino and WebSphere doesn't make a lot of sense for us," says Ed Brill, senior manager for enterprise messaging at Lotus. He says Lotus would have to spend millions of dollars to develop and support a technology that already exists within IBM.

Brill says using IBM's existing work with WebSphere is the correct way to make Domino data available to J2EE applications. ■

The Scoop

The news behind the news

It's all about context

There is an interesting concept swirling around collaborative software that Lotus and Microsoft are doing their best to elevate to buzzword status: "contextual collaboration."

The idea is you can take a slice of a self-contained collaboration server — an e-mail in-box, a calendar, a discussion group or an instant messaging capability — and slide it into another application without the hassles of hard-coding.

The benefit is users won't have to leave familiar applications to enter a separate collaboration system. Fewer applications mean fewer interfaces and training issues.

Collaboration features in business applications mean efficiencies gained through the ability to question, converse and negotiate within the context of one application. It's the human element, or as close to it as you can get, for electronic business.

For example, a customer relationship management application may have incorporated into its interface a discussion-group component so that a customer representative could create a forum to log and answer questions.

With the advent of Web services, which let pieces of code be wrapped in standards-based interfaces, Lotus and Microsoft are trying to deconstruct servers into individual single-function components that can be blended into other applications.

Lotus announced its strategy around Java and Java 2 Platform Enterprise Edition last week, and Microsoft is busy constructing its story around .Net. However, neither vendor has made significant progress.

Meta Group analyst Matt Cain coined the term "contextual collaboration" about two years ago. Cain says traditional collaboration suites and emerging collaboration models, such as peer-to-peer and teamware, "will evolve as embedded, process-specific components within business systems." Indeed, Groove Networks is already working with Microsoft to embed its peer-to-peer software into Office.

IT executives can be sure that accompanying this evolution will be a steady diet of vendor-led testimonials on contextual collaboration's potential to make the electronic business world a friendlier place.

— John Fontana



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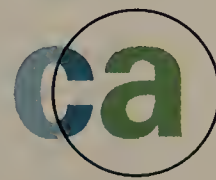


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Hackers, vendors put camouflage to use

Latest virus relies on trick URL; start-up ForeScout aims to fend off viruses, hackers.

■ BY ELLEN MESSMER

The "MyParty" virus, masquerading as a URL for an online archive of photos, came as a shock last week to many people who didn't realize that a mass-mailer worm could disguise itself as a harmless-looking link in a message.

The virus, camouflaged as www.myparty.yahoo.com, urged e-mail recipients to click on it to see photos of what was said to be the sender's recent party. But the URL was actually a computer virus that left a dangerous backdoor Trojan horse on infected machines before mailing itself off through the Microsoft Outlook directory.

"Not only did it e-mail to everyone, and I mean everyone, in my address book, but my computer crashed shortly thereafter," says one MyParty victim, who prefers to remain anonymous.

Antivirus software vendors quickly issued a signature update to stop MyParty last week, noting people are likely to suffer a new mistrust of URLs in messages in general.

"This mass-mailer worm will impact the credibility of all URLs, particularly for photo archives such as Yahoo and Shutterfly," says Chris Wraight, technical director at antivirus software vendor Sophos. Several vendors recalled they had seen a computer virus disguised once before, the "Cool-side" virus of six months ago.

Fortunately, it's not only the bad guys making use of camouflage and artifice. Disguise and misinformation can help defend networks, too. Security vendor ForeScout Technologies next week will introduce a product called ActiveScout that combines an intrusion-detection system (IDS) with the capabilities of a "honeypot" to ward off hackers and worms such as Nimda and Code Red that scan for vulnerabilities.

The idea of a network-based honeypot is to provide would-be hackers with fake information about a network by means of a decoy server to confuse them, trace them back or keep a record for prosecution. The concept is still new, but a few companies,

such as Recourse Technologies with its ManTrap product, have developed honeypots.

Now along comes ForeScout, an Israeli firm with offices in Palo Alto, with a slightly different twist of its own to fool hackers.

ActiveScout, a rules-based IDS, sits outside the corporate firewall to identify potential threats and block them, says Ayelet Steinitz, product marketing manager for ForeScout, which has raised \$14 million since its inception in April 2000. "It also does discovery inside the network and watches traffic going back and forth," Steinitz says.

When an attacker scanning with tools — or hybrid worms that scan — seeks to gain information about the corporate network, the Linux-based ActiveScout device will give back false information.

"It creates a virtual IP address," says one ActiveScout beta-test customer, Barry Choisser, network manager at Risk Management Solutions, a Newark, Calif., developer of software applications for the insurance industry.

Steinitz says ActiveScout can insert unique "tagged" information into the stream of traffic back to an attacker scanning for open ports or other information. Sometimes an attacker conducts reconnaissance from many addresses, most of them fake, a trick used to fool an IDS. If an attacker returns to attempt a break-in, ActiveScout would recognize the real source of the attack with the tagged information, Steinitz says.

ActiveScout, which starts at about \$9,000 with its management console, will be on display in two weeks at the RSA Conference in San Jose.

Choisser says his network is subject to dozens of scans and attempted break-ins each week. "I see Nimda and people trying to get through [Secure Shell (SSH)] ports," he says.

The SSH Service is used as a secure alternative to telnet because of its encryption and authentication options, but older versions of SSH are "plagued with several vulnerabilities," according to a threat-analysis report released by managed security services firm Riptech last week.

Hackers know about weaknesses in SSH and they probe

Under attack

These are the most common network attacks as reported by 300 clients of managed security services vendor Riptech.

1. Microsoft Index Services ISAPI Overflow Attack 47.8%
2. Generic "root.exe" request attack 25.1%
3. Microsoft IIS Directory Transversal (Unicode) Attack 23.5%
4. Microsoft IIS Superfluous Decode Attack 17%
5. Generic "cmd.exe" request attack 16.5%
6. Scan for 27374/tcp (SubSeven) 5%
7. Scan for vulnerable and/or misconfigured FTP servers 3.8%
8. Scans for systems with RPC(tcp) enabled 2.8%
9. Scans for SSH service 1.3%
10. Scans for LPD service 1.2%

Figures total more than 100% because multiple replies were allowed.

for them, which is why SSH made Riptech's list of "Top Ten" attacks (see graphic).

The Riptech report found that each of its 300 customers surveyed suffered an average of 25 attacks per week, with 39% of the attacks appearing to be targeted at the companies. The rest of the attacks were random scans to search for vulnerable systems on the Internet.

"The problem is, when we get scanned, we don't know who it is; we just know it's from an ISP," says Mark Parquette, assistant vice president of information systems at Charter Bank in Wyandotte, Mich., whose Cisco PIX firewall and NetRanger IDS are monitored by managed services provider NetSolve.

Although Parquette says the ForeScout equipment sounds promising, it's an open question whether smaller companies such as Charter Bank will allocate funds to buy it.

ForeScout: www.forescout.com

ArcSight sets sights on security mgmt.

■ BY ELLEN MESSMER

SUNNYVALE, CALIF. — Enterprise customers looking to fortify their networks tend to buy lots of security products from lots of vendors because of the choice of firewalls, intrusion-detection systems and syslog analysis tools available. One downside to this is that getting a read on overall network security can involve dealing with a slew of separate management consoles.

Start-up ArcSight thinks many corporations would prefer to centralize the information from these security devices. To that end, ArcSight last week introduced ArcSight 1.0, Java-based server software that collects the output from about two dozen devices.

ArcSight 1.0 consists of "Smart Agents" that can be loaded directly on security equipment to collect the information as well as middleware software that will receive the information directly

over a network and consolidate it as alerts, warnings and reports in an Oracle database.

ArcSight can collect security information from Cisco routers and NetRanger IDS systems, Check Point Software firewalls, SNORT intrusion-detection freeware, Entercet behavior-blocking software and Tripwire IDS products.

ArcSight 1.0 starts at \$100,000. The security-management start-up wants to compete against software vendors with "security management umbrellas" of their own, such as NetForensics, eSecurity and IBM's Tivoli division.

Corio has adopted ArcSight to get a real-time security overview of its application service provider network.

"But you have to tune it, and that takes time," says Mark Milatovich, directory of security at Corio. The adjustments ArcSight 1.0 requires means it could be a few months before Corio gets the full benefits of the software, he says. ■

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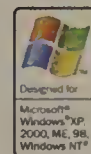
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Users to get read on Palm's future

Observers say pressure is on to release next operating system.

■ BY JOHN COX

SAN FRANCISCO — Network executives will get a chance to hear Palm's top executives lay out the company's direction at this week's PalmSource conference.

It could be a turning point for Palm, which is being hit with several challenges all at once:

- It's in the midst of a reorganization;
- The new version of its operating system, rewritten for the powerful ARM 32-bit microprocessor, is still not out;
- The recently unveiled Palm i705 wireless handheld has met with mixed reviews, judging from comments in newsgroups and on Web sites;
- Competition is heating up, not only from archrival Microsoft and its PocketPC 2002 operating system, but also from Palm's licensees, such as Handspring and Sony;
- The stock price has dropped since August from a 52-week high

of nearly \$29 to less than \$5.

All these pressures will come to bear on newcomer David Nagel, CEO of the recently formed Palm OS subsidiary, who makes his first appearance this week before thousands of Palm developers and partners. The audience will look for evidence Palm still has a vision of handheld computing that relates to the needs of enterprise network users.

Observers expect Nagel to lay out a clear roadmap for the transition of the current Palm OS to a 32-bit chip architecture and detail how Palm will address nagging security issues, improve wireless connectivity and ensure that its products work better with corporate databases and applications.

One major announcement for developers will be the release of reference applications for the Palm OS. A joint effort by Palm, Kada Systems, Oracle, Sybase and Hexaware Technologies, the applications use embedded data-

bases, and Kada's synchronization software and APIs to let developers more quickly build custom applications for line-of-business functions such as customer relationship management.

"Palm used to have the opportunity to command the enterprise [market]," says Ken Dulaney, an analyst with Gartner. "But it lost that through bad management." Dulaney cites the spinoff from parent 3Com, Palm's IPO and several top-level turnovers, all in less than five years, as culprits.

"The PocketPC is interesting to enterprise IT because it ties in well with Microsoft software," Dulaney says. "What Palm has to do now is view Microsoft as less of an enemy and, instead, build systems that tie into Microsoft [platforms already entrenched in the enterprise]."

"Palm has had an unwavering commitment to the enterprise, but the focus has been fragmented," says Kevin Burden, an analyst for IDC.



Palm's i705 handheld features built-in wireless support.

Take security, for example. Palm announced last November that RSA Security's highly regarded encryption software would be associated in some way with "future versions" of the Palm OS. But Palm never spelled out what that would mean. Today, security for

Palm applications in the enterprise remains a matter of stitching together an array of products and technologies.

For a range of enterprise applications, the Palm OS doesn't have the muscle that's needed. Multithreading, which lets an operating system simultaneously handle an array of tasks, will finally be introduced with the ARM-based Palm OS.

"Proper multitasking will allow a more stable system, and allow a new breadth of network/wireless applications to appear," says Russell Bulmer, a software engineer, and long-time Palm user, with Conigma, a wireless services start-up in London.

Bulmer and others expect Palm will include with the ARM-based Palm OS an emulator that will let users run existing Palm applications on the ARM devices, which are likely to appear in the latter half of the year. ■

LinuxWorld Expo heralds enterprise goodies

■ BY PHIL HOCHMUTH

NEW YORK — While the 25,000 or so attendees at last week's LinuxWorld Expo ranged from bearded and pimply faced Linux hackers to corporate CIOs in pin-stripes, one message resounded clearly from the show: Now is the time for enterprise customers to make the move to Linux.

A bevy of new enterprise products and conference panels and tutorials on how companies can benefit and save money with Linux were among the conference highlights. Adding to the notion that Linux has "arrived" as a prime-time IT entity were high-profile keynotes from top industry CEOs including Hewlett-Packard's Carly Fiorina and Computer Associates' Sanjay Kumar, and many examples of high-end Linux deployments.

CA introduced 23 management products for controlling Linux. The software ranged from tools to manage an entire network to point management products for storage, security and intranet portal hosting.



HP chief Carly Fiorina called her company's proposed merger with Compaq "a combination that's good for Linux."

Some of the company's major enterprise software available for Linux now includes the whole eTrust line of security management tools, the Unicenter Network and System Management application, BrightStor ArcServ Backup and CleverPath enterprise portal server.

With the new products, CA aims to bring management to businesses that want to rein in

Linux servers running on the periphery of a network or help companies manage a network built from the ground up on Linux, says Murray Berkowitz, CA's senior vice president for advanced technology.

The pervasiveness of Linux technology across a range of platforms was evident on the show floor as vendors had Linux running on everything from wristwatches to supercomputers. HP, Compaq and IBM showed off Linux on Intel systems in clustered systems and stand-alone 32- and 64-bit Intel systems, while Big Blue also trumpeted its Big Iron as a way to consolidate multiple Linux servers onto one platform.

One of the largest crowds on the show floor was at the Sharp booth, where attendees tried to get a peek at the Linux-based Zaurus SL-5500 handheld, which runs embedded Linux with Java support and features a built-in BlackBerry-like keyboard.

HP's Fiorina kicked off the show in front of a packed auditorium with a keynote speech that placed Linux alongside

Windows and Unix as a key enterprise infrastructure platform going into the future. She also called her firm's proposed merger with Compaq "a combination that's good for Linux," as each firm has integrated Linux product and support offerings.

In a separate address, an IBM official described the adoption of Linux across the company's server line as a turning point for IBM. "The adoption of Linux," said William Zeidler, IBM vice president and server business head, "completely reshaped our entire server business." The development of Linux on the mainframe almost single-handedly turned that product around, as mainframe sales have been up the past five quarters, he said.

The exhibition was also a showcase for touting production Linux deployments, with companies such as animation studios Pixar and SKG Dreamworks, eTrade, and the investment banking firm Credit Suisse First Boston all detailing their rollouts, which ranged from high-powered desktops to Web

servers and the use of Linux on IBM mainframes.

Harry Roberts, CIO of Boscov's department stores in the mid-Atlantic region, cut his support costs in half by moving a server farm of several dozen Microsoft Windows boxes onto his IBM mainframe.

"For every 10 to 12 servers we have, that's another [staff member] I need to run and maintain that equipment," Roberts said. "The goal was to move to one piece of iron as fast as possible," as a way to cut costs when management said it was time for some belt tightening, he added.

Patrick Carroll, senior systems engineer for L.L. Bean in Freeport, Maine, took a more gradual approach to Linux. Carroll said L.L. Bean saved more than \$12,000 by replacing a Sun SPARC-based customer e-mail response server to a Linux-based mainframe. The mainframe supporting Linux and running Sendmail pumps out e-mails to customers 30 times faster than his original server, he said. ■

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VPNs take center stage at ComNet

Showdown, service announcements prove to be highlights at otherwise quiet show.

■ BY TIM GREENE AND
DENISE PAPPALARDO

WASHINGTON — VPNs caught the spotlight at last week's ComNet 2002 show, with a spirited VPN service-provider debate and the debut of offerings from the likes of WorldCom and Sprint.

Network World's VPN Showdown, which pitted AT&T, Equant, Genuity and WorldCom executives against each other, attracted a standing-room-only crowd of 530 — one of the stronger showings at the conference, which drew a much smaller-than-usual attendance in light of industry and economic doldrums.

While customers continue to rely on frame relay, leased lines and other WAN infrastructure, VPNs are coming on strong, as evidenced by the two-thirds of U.S. companies that IDC says are already using them for at least some of their remote access. VPN service spending is expected to roughly triple over the next five years, from \$1.8 billion to \$5.3 billion, according to IDC.

To meet demand, the panelists said their companies are furiously expanding their VPN offerings, which range from



“[AT&T does] a huge amount of business in switched voice. Is that perhaps causing you to go a bit slow on supporting voice over IP in your IP VPN platform?”

Arjen Maarleveld, head of products at Equant

“I think it's more a matter of, are our customers interested in buying those kinds of services? But we certainly have built in no gates.”

Johnathan Cohen

Director of advanced IP services, AT&T



PHOTOS: STAN BAROUH

fully managed services based on IP Security gear placed at customer sites, to carrier-based services built around Multi-protocol Label Switching (MPLS).

Equant leapt early into MPLS VPN services, but knows that some customers don't want them, said Arjen Maarleveld, the global service provider's head of products. “IPSec has its place, too, so we offer both,” he says.

Despite agreeing that customers want

more choice, providers took a few shots at each other. “[AT&T does] a huge amount of business in switched voice. Is that perhaps causing you to go a bit slow on supporting voice over IP in your IP VPN platform?” Maarleveld asked Johnathan Cohen, director of advanced IP services for AT&T.

“I think it's more a matter of, are our customers interested in buying those kinds of services?” Cohen replied. “But

we certainly have built in no gates.” AT&T does offer voice-over-IP support for its managed Internet access customers, but not its VPN customers.

Later, Genuity Director of Product Strategy John Summers said that, at 32 countries, WorldCom offered services to the lowest number of nations among companies on the panel.

WorldCom indeed delivers to customers in 32 countries over its own network, but uses other vendors' facilities to reach further than that, said Janel Crabtree, WorldCom's director of global VPN services. “We've expanded that to over 60 because we have incorporated access from [third parties],” she said.

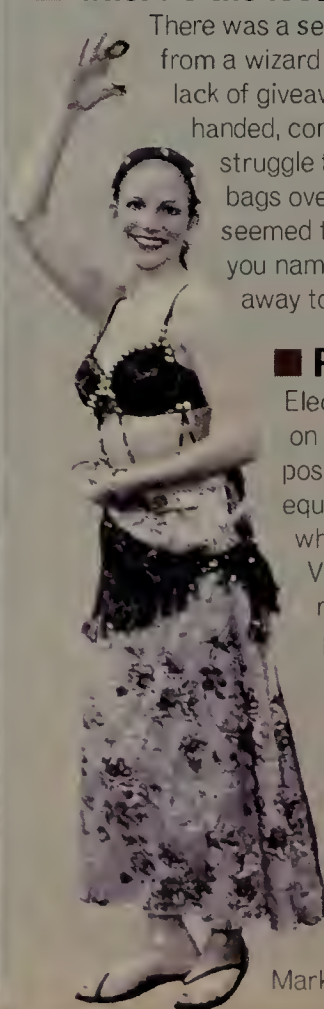
In response to a question from *Network World* Editorial Director John Gallant, who moderated the debate, Genuity's Summers acknowledged the company has taken a beating on Wall Street, as evidenced by a stock price hovering at around \$1.20 last week, down from a 52-week high of \$4.17. But Summers said customers should be confident in the company's long-term prospects given that it has \$500 million in funding that should help it get into the black. And he

See ComNet, page 72

Reporter's Notebook From VPN-ready cabinets to translating the trickiest of terms.

■ Where's the loot?

There was a serious lack of razzle-dazzle on the show floor, aside from a wizard here and a belly dancer there. There was also a lack of giveaways. Many attendees roamed practically empty-handed, compared to showgoers in years past who had to struggle to haul around vendor logo-emblazoned canvas bags overflowing with tchotchkes. Rather, most vendors seemed to settle for dishes of candy — mints, chocolates, you name it. We could have used a few vendors giving away toothbrushes and dental floss after all that.



■ Ready for anything

Electronics cabinetmaker Rittal knows how to jump on a trend. Aware that VPNs are all the rage, it posted this claim next to one of its sheet-metal equipment enclosures: “VPN Ready.” It's unclear just what you have to do to a cabinet to ready it for VPN or anything else, for that matter. The company might just as well point out that the box supports Windows, Linux and Solaris, too.

■ Spam smackdown

The “Spam Wars” session/debate held Wednesday certainly lived up to its name. Far from devising ways to solve the issue of unsolicited bulk e-mail, panelists couldn't even agree on how to define the problem. “There are levels of permission,” said Ben Isaacson, executive director of the Association for Interactive Marketing, a subsidiary of the Direct Marketing

Association. “You buy something from a retailer, and they have permission to contact you. If you say you don't want it, then they should stop.” But that idea didn't fly with other panelists.

“If I want things, I'm perfectly capable of asking for them,” said Kelly Thompson, a standards and practices manager with Mindshare Design of San Francisco. “The real concern is that the growing volume [of unsolicited e-mail] is causing people to distrust e-mail and to distrust engaging in online commerce,” said Ray Everett-Church, chief privacy officer at San Jose ePrivacy Group. “That distrust will kill e-mail and the Internet faster than anything else.”



■ It's all in the translation

As if explaining terms such as Multi-protocol Label Switching, VPN and voice over IP isn't hard enough to do with words, imagine trying to translate their meaning with your hands. That was the challenge for Jeffrey Bowden and Michelle Lewis, whose job last week was to use sign language to translate keynote and other ComNet presentations for deaf members of the audience.

“Because of the nature of electronic communications, members of the deaf community can excel in IT fields,” said Bowden, who tag-teamed with Lewis every 20 minutes to avoid burnout.

The interpreters said their translations tend to be more delayed than usual when dealing with highly technical presentations, as they work to make sure they get things exactly right. Lewis added: “You just spell out the letters in the acronyms, you don't need to know what they mean.”

Redline aims to rev up Web processing

■ BY TIM GREENE

WASHINGTON, D.C. — Redline Networks made a splash at ComNet 2002 with boasts that its new Web acceleration gear speeds downloads by up to 10 times and reduces the need to buy new servers as traffic increases.

COMNET

Redline claims its T/X 2100 and 2400 Web acceleration appliances reduce the number of bits it takes to transmit a page by 50% to 74%, saving bandwidth and processing power. The devices also slash the number of TCP sessions Web servers have to handle, increasing server performance up to twentyfold, according to Sarah Stanwyck, Redline's vice president of marketing.

The devices are aimed at enterprise customers, but hosting providers or ISPs also could use them to reduce caching and increase performance.

Online comparison-shopping portal BizRate.com says a T/X 2400 compressed and optimized traffic in its server farm so much that it saved the company thousands of dollars per month on Internet-access bandwidth. It was enough to pay off the \$20,000 T/X 2400 in two months, says Jody Mulkey, BizRate.com's vice president of data systems.

Former Dell employees came up with the idea for Redline after working on a project that pointed out, among other things, that setting up the multiple TCP sessions needed to download Web pages chews up processing power on servers. A separate device could relieve that.

In 2000 they won seed funding from former 3Com chief Robert Finocchio and Ken Oshman — the "O" in ROLM, the pioneering PBX company. Redline also landed \$10 million from Advanced Technology Ventures.

The Campbell, Calif., company has a pack of competitors, including Packeteer, NetScaler and PictureIQ, says Peter Christy, an analyst with NetsEdge Research Group. These companies approach Web acceleration slightly differently, some using caching to offload servers.

Redline T/X devices don't cache, but efficiently retrieve Web pages from servers and optimize them to send to requesting PCs. T/Xs sit between Web

farm load balancers and Web servers. The devices establish links between downstream devices requesting Web access and corporate Web servers. Without these

devices, the requesting devices would make TCP connections directly with the Web servers, tying up the servers with

See Redline, page 72



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Correction

■ The photo that accompanied the story "Unisphere product juggles protocols" (Jan. 28, page 37) showed the incorrect product.

■ The "Look before you leap into 802.11a" editorial (Jan. 28, page 46) misidentified the company with which Proxim is merging. The correct company is Western Multiplex.

Evolution

continued from page 1

able and inexpensive hardware with performance that rivals Unix-based systems. And users deploy Linux more frequently for business-critical applications. In fact, Linux deployment is so hot, IDC says, that 9% of IT budgets will be spent on deploying and developing the operating system and applications this year.

In analyzing competitive products, Inzerillo found Linux offered reliability and performance comparable to Unix, and ran on the same Intel platform as Windows NT/2000. Inzerillo says that even though customers can spend \$3,000 to \$5,000 on an Intel-based server, as they grow they will run into scaling and performance problems that will precipitate a move to a more powerful Unix box.

"If you're really looking at the total cost of ownership and trying to get the performance, the best reliability and integration with applications, Linux is just so much more malleable and robust than Windows NT or 2000," says Inzerillo, who runs Red Hat Linux on four Dell PowerEdge servers attached to 90 terabytes of EMC Clariion storage. In addition, Inzerillo says the number of systems engineers he needs to support Linux is half of what his NT servers require.

Linux, once an operating system that users viewed with suspicion for enterprise applications because of its unconventional support and development, is also a boon for just those reasons. Linux's reliance on a development community means changes get made faster

and problems are fixed more quickly, says Joe Poole, technical director for Boscov's department store chain, which has 57 stores in the mid-Atlantic region.

"If you have open source [software], people look at it very carefully because in peer review they don't want to miss anything," Poole says. "If you put your stamp of approval on something, it's your own reputation on the line. There are thousands of people all over the world that are doing that."

Some businesses, such as Boscov's or oil exploration company Amerada Hess in Houston, pin their everyday business on Linux. At Boscov's, a mission-critical invoice-matching system that compares inventory ordered with inventory received runs as a Linux application on an IBM mainframe. At Hess, Linux plays roles on both desktops and servers used by scientists and geologists to explore for oil.

Jeff Davis, a senior systems programmer, is in charge of Linux operations at Hess. He has put 30% of his servers and workstations on Linux. Davis says the division of Hess has 320 Linux servers, 10 Solaris servers and several hundred NT/2000 servers distributed among 200 users.

"The main reason we started with Linux was because of cost — it's less expensive for the operating system, but it also let us use less-expensive [Intel] hardware," Davis says.

More than two years ago, Hess replaced a leased IBM supercomputer with a \$130,000 cluster that runs Red Hat Linux. Red Hat claims the migration saved Hess more than \$2 million on a three-year supercomputer lease.

"We could buy off-the-shelf systems rather than buying specialized systems from IBM or Sun," Davis says. The engineering and geophysicist users Davis is responsible for also run an open source Linux product called Ximian Desktop on their PCs.

"These [scientists, geologists and engineers] previously had Solaris desktops," Davis says. "The transition from Solaris to Ximian involved literally no training. I just sat with the users for about 5 minutes and then left them to their own devices."

you can do to the box."

Inzerillo says he has Linux servers that have been up for 200 to 300 days and have given him "huge savings [in peace of mind] not having to worry about them."

"On Windows NT/2000 servers, we wind up just prophylactically rebooting servers and scheduling downtime once a week," Inzerillo says.

Users do have issues with Linux, support being the main one.

The support for Linux is a concern to Malcolm Fields, CIO of

ronment to an [operating system] that has nebulous support. Support is still a big safety blanket in a production environment with mission-critical systems."

As for the future, most users plan to migrate more applications to the operating system. Researchers at IDC say more than 2,300 enterprise-level applications already have been ported to Linux.

Newellco is considering running some databases on Linux and already has a few CD-ROM,



“When you look at the resources and what you are doing with them, it's clear that the Linux decisions we've made have let us do a whole lot more with a whole lot less.”

Joe Inzerillo
CTO, United Center

Paul Watkins, network analyst for Newellco Rubbermaid, manufacturer of indoor/outdoor storage products, Levelor blinds and Calphalon pans, says Linux has saved his company more than \$100,000 per year that they previously spent on outsourced performance management.

Watkins runs an open source performance-monitoring package called the Multi-Router Traffic Grabber (MRTG) against the nearly 250 Cisco routers and switches that link the 190 locations in Newellco's global network. MRTG runs on Linux, Unix and NT.

When Newellco originally brought the traffic management in-house, Watkins put it on an NT server, where performance suffered. When Newellco was looking for a Linux application to run on its IBM eServer zSeries mainframe, Watkins nominated MRTG.

"We were at a point where it took over a half hour to poll 70% of our network from a Windows NT server," Watkins says. "We wanted real-time data, not 30-minute old data. With Linux, we went from 30 minutes to under three."

Linux is also better from a stability standpoint than NT/2000, the United Center's Inzerillo says. "Under Windows NT when things go south, there's no indication and there's not much you can do to figure out why it happened. With Linux, there's so much more reporting and tuning

Hon Industries, a manufacturer of office furniture and gas/wood-burning fireplaces in Muscatine, Iowa.

"Anyone who manages a large data center has to have some concerns about an open source application, because you don't really want to be in the business of maintaining operating systems."

"You have to be careful about moving to open source, because at some point you are going to have to manage it," he says.

In Field's organization more than 250 embedded bar code scanners and computers are positioned on the factory floor at 35 sites, where nearly half of Hon's factory workers enter data about the manufacturing process. Systems engineers with Unix backgrounds use Caldera's Volution network management software to manage the devices.

Watkins says he hopes the development of Linux doesn't splinter into a bunch of incompatible versions like Unix did. He also would like to see more vendors port their front-office applications, such as Microsoft Office, to Linux.

There is the perception that Unix and NT/2000 may be more supportable than Linux because they have large company support organizations backing them, Inzerillo says. "A lot of people may have problems letting go of their production envi-

ronment to an [operating system] that has nebulous support. Support is still a big safety blanket in a production environment with mission-critical systems."

And at Boscov's, Poole says he's looking to move as many servers onto Linux as he can.

"Linux has the potential of becoming a good, stable operating system that more people can run their SAP and PeopleSoft applications on. The more of those applications that become available, the more people who will be attracted to Linux, not only because of its stability but because it's a highly secure environment on which to run applications." ■



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Consider this

Linux business users say there are a few things to ponder before rolling out Linux, including:

Costs: Look at total cost of ownership. IDC says users can save \$307 per year, per seat by running Web, intranet and other applications on Intel-based Linux servers over Unix boxes.

Training: Unix-trained systems administrators will have an easier time learning Linux.

Guarantees: Buy from a vendor that will provide you with a support contract. IBM, Red Hat and other large vendors have wide-ranging support available.

Experiment: Bring Linux in-house slowly — start with a pilot project to gauge its impact.

Help: If you are deploying many Linux machines, consider a management package such as TurboLinux's PowerCockpit. PowerCockpit automates the configuration and deployment of Linux servers — making your IT folks' jobs a little easier.



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B202

1. What is the principal business activity at your location?

(check ONE only)

- | | | |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 01. <input type="checkbox"/> Manufacturing (Non-Computer/Communications OEM) | 09. <input type="checkbox"/> Utilities/Process Industries (Mining/Construction/Petroleum Refining/Agriculture/Forestry) | 16. <input type="checkbox"/> Manufacturing (Computer/Communications/OEM) |
| 02. <input type="checkbox"/> Finance/Banking | 10. <input type="checkbox"/> Government/Military | 17. <input type="checkbox"/> Resellers/VARS/VADs/Integrators/Distributors* (Computers/Communications) |
| 03. <input type="checkbox"/> Insurance/Real Estate/Legal | 11. <input type="checkbox"/> Consulting (Independent)* | 18. <input type="checkbox"/> Other (please specify) _____ |
| 04. <input type="checkbox"/> Health Care Services | 12. <input type="checkbox"/> Education | |
| 05. <input type="checkbox"/> Hospitality/Entertainment/Recreation | 13. <input type="checkbox"/> Carriers/Voice/Data/ISP | |
| 06. <input type="checkbox"/> Media/TV/Cable/Radio/Print | 14. <input type="checkbox"/> Web Hosting/HSP | |
| 07. <input type="checkbox"/> Retail/Wholesale Trade/Business Services | 15. <input type="checkbox"/> ASP/SSP/MSP | |
| 08. <input type="checkbox"/> Transportation | | |

*Attn Consultants, Integrators, Distributors, Resellers: Please complete form based on ALL clients and your own business needs

2. P: What is your primary job function? (check ONE only) S: What additional job functions are you involved in? (check ALL that apply)

- | | | | | | |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------|---|
| P | S | P | S | P | S |
| <input type="checkbox"/> 1. <input type="checkbox"/> Network Management | <input type="checkbox"/> 4. <input type="checkbox"/> Datacom/Telecom Management | <input type="checkbox"/> 7. <input type="checkbox"/> Corporate Management (CEO, COO, CFO, Pres., VP, Dir., Mgr.) | | <input type="checkbox"/> 8. <input type="checkbox"/> Consultant (Independent) | |
| <input type="checkbox"/> 2. <input type="checkbox"/> CIO/CTO/ISAT/MIS/Systems Management | <input type="checkbox"/> 5. <input type="checkbox"/> Internet/Intranet/Web/E-Commerce Management | <input type="checkbox"/> 9. <input type="checkbox"/> Other (please specify) _____ | | | |
| <input type="checkbox"/> 3. <input type="checkbox"/> LAN Management | <input type="checkbox"/> 6. <input type="checkbox"/> Engineering Management | | | | |

3. What is the estimated value of network equipment and services that you specify, recommend, or approve the purchase of? (Please print the appropriate number code on the line next to each product category. Please complete ALL categories A-0.)

- | | | |
|-----------------------------------|------------------------------------------------|-------------------------------------------------------|
| 1. \$100 Million or more | A _____ Large Systems (Mainframes/Minis) | H _____ Internet/Web/E-commerce |
| 2. \$50 Million to \$99.9 Million | B _____ Desktops (Micros/Laptops/Workstations) | I _____ Intranet/Extranet |
| 3. \$25 Million to \$49.9 Million | C _____ Mobile (including PDAs, Wireless) | J _____ Internetworking (including Routers, Switches) |
| 4. \$10 Million to \$24.9 Million | D _____ Servers | K _____ Storage |
| 5. \$1 Million to \$9.9 Million | E _____ LANs | L _____ Remote Access |
| 6. \$100,000 to \$999,999 | F _____ WAN Equipment | M _____ Peripherals |
| 7. \$50,000 to \$99,999 | G _____ Carrier Services | N _____ Software |
| 8. Under \$50,000 | | O _____ Service/Support Services |
| 9. None of the above | | |

4. What is the total number of sites for which you have purchase influence? (check ONE only)

1. ☐ 100+ 2. ☐ 50 to 99 3. ☐ 20 to 49 4. ☐ 10 to 19 5. ☐ 2 to 9 6. ☐ 1 7. ☐ None

8. Please indicate the Web/Security/LAN/Internetworking/Wireless/Mobile/WAN Equipment/Carrier Services that you are currently involved in purchasing or plan to purchase: (check ALL that apply) A. Currently involved in purchasing B. Plan to purchase

- | | | | | | |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---|---|-------------------------------------------------------|
| WEB | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 01. <input type="checkbox"/> Web Servers/Software | <input type="checkbox"/> 04. <input type="checkbox"/> Web Development Tools | <input type="checkbox"/> 07. <input type="checkbox"/> Web Acceleration/Caching/Load Balancing | | | |
| <input type="checkbox"/> 02. <input type="checkbox"/> Web Traffic Management | <input type="checkbox"/> 05. <input type="checkbox"/> Web Content Management | <input type="checkbox"/> 08. <input type="checkbox"/> Web Hosting Services | | | |
| <input type="checkbox"/> 03. <input type="checkbox"/> Electronic Commerce Tools | <input type="checkbox"/> 06. <input type="checkbox"/> Web Collaboration/Groupware | <input type="checkbox"/> 09. <input type="checkbox"/> Other | | | |
| SECURITY | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 10. <input type="checkbox"/> Firewalls | <input type="checkbox"/> 13. <input type="checkbox"/> DES Encryption Tools | <input type="checkbox"/> 16. <input type="checkbox"/> Certificate Authorities | | | |
| <input type="checkbox"/> 11. <input type="checkbox"/> Anti-Virus Software | <input type="checkbox"/> 14. <input type="checkbox"/> Authentication Tools | <input type="checkbox"/> 17. <input type="checkbox"/> Biometrics | | | |
| <input type="checkbox"/> 12. <input type="checkbox"/> Private Key Encryption Tools | <input type="checkbox"/> 15. <input type="checkbox"/> Intrusion Detection | <input type="checkbox"/> 18. <input type="checkbox"/> Other | | | |
| LAN/INTERNETWORKING | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 19. <input type="checkbox"/> Fast Ethernet | <input type="checkbox"/> 26. <input type="checkbox"/> Storage Backup (Optical, Disk, Tape, RAID) | <input type="checkbox"/> 30. <input type="checkbox"/> Hubs/Intelligent Hubs/Stackable Hubs | | | |
| <input type="checkbox"/> 20. <input type="checkbox"/> Gigabit Ethernet | <input type="checkbox"/> 27. <input type="checkbox"/> Network Test/Diagnostic Tools | <input type="checkbox"/> 31. <input type="checkbox"/> Cables/Connectors, Baluns | | | |
| <input type="checkbox"/> 21. <input type="checkbox"/> Layer 3-7 Switches | <input type="checkbox"/> 28. <input type="checkbox"/> Uninterruptible Power Supplies (UPS) | <input type="checkbox"/> 32. <input type="checkbox"/> Wiring/Fiber Systems | | | |
| <input type="checkbox"/> 22. <input type="checkbox"/> ATM Switches | <input type="checkbox"/> 29. <input type="checkbox"/> Network Interface Cards (NICs, PCMCIA) | <input type="checkbox"/> 33. <input type="checkbox"/> Net Management Systems | | | |
| <input type="checkbox"/> 23. <input type="checkbox"/> Routers | | <input type="checkbox"/> 34. <input type="checkbox"/> Voice Over IP (VoIP) Tools | | | |
| <input type="checkbox"/> 24. <input type="checkbox"/> Network Attached Storage (NAS) | | <input type="checkbox"/> 35. <input type="checkbox"/> Network Analyzers | | | |
| <input type="checkbox"/> 25. <input type="checkbox"/> Storage Area Networks (SANs) | | <input type="checkbox"/> 36. <input type="checkbox"/> Other Local-Area Network/Internetworking | | | |
| WIRELESS/MOBILE | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 37. <input type="checkbox"/> Wireless LANS | <input type="checkbox"/> 39. <input type="checkbox"/> Wireless LAN Extension Tools | <input type="checkbox"/> 41. <input type="checkbox"/> PDAs | | | |
| <input type="checkbox"/> 38. <input type="checkbox"/> Wireless/Cell Phones | <input type="checkbox"/> 40. <input type="checkbox"/> Mobile Data Equipment/Services | <input type="checkbox"/> 42. <input type="checkbox"/> Other Remote/Wireless | | | |
| WAN EQUIPMENT | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 43. <input type="checkbox"/> Frame Relay Equipment | <input type="checkbox"/> 48. <input type="checkbox"/> Voice/Video over IP Gateways | <input type="checkbox"/> 53. <input type="checkbox"/> DSUs/CSUs | | | |
| <input type="checkbox"/> 44. <input type="checkbox"/> Bandwidth Managers | <input type="checkbox"/> 49. <input type="checkbox"/> Modems | <input type="checkbox"/> 54. <input type="checkbox"/> PBXs | | | |
| <input type="checkbox"/> 45. <input type="checkbox"/> Bandwidth Shaping/QoS Tools | <input type="checkbox"/> 50. <input type="checkbox"/> Cable Modems | <input type="checkbox"/> 55. <input type="checkbox"/> Call Center Tools | | | |
| <input type="checkbox"/> 46. <input type="checkbox"/> VPN Equipment | <input type="checkbox"/> 51. <input type="checkbox"/> xDSL Products | <input type="checkbox"/> 56. <input type="checkbox"/> Videoconferencing Gear | | | |
| <input type="checkbox"/> 47. <input type="checkbox"/> ATM Switches | <input type="checkbox"/> 52. <input type="checkbox"/> Diagnostic/Test Equipment | <input type="checkbox"/> 57. <input type="checkbox"/> ISDN Equipment/Services | | | |
| | | <input type="checkbox"/> 58. <input type="checkbox"/> Other WAN Equipment/Services | | | |
| CARRIER SERVICES | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 59. <input type="checkbox"/> Internet Access | <input type="checkbox"/> 64. <input type="checkbox"/> ATM Services | <input type="checkbox"/> 69. <input type="checkbox"/> Wavelength Services | | | |
| <input type="checkbox"/> 60. <input type="checkbox"/> Private Lines | <input type="checkbox"/> 65. <input type="checkbox"/> Managed Services | <input type="checkbox"/> 70. <input type="checkbox"/> Dark Fiber | | | |
| <input type="checkbox"/> 61. <input type="checkbox"/> Frame Relay Services | <input type="checkbox"/> 66. <input type="checkbox"/> VPN Services | <input type="checkbox"/> 71. <input type="checkbox"/> Other Carrier Services | | | |
| <input type="checkbox"/> 62. <input type="checkbox"/> ADSL/DSL | <input type="checkbox"/> 67. <input type="checkbox"/> LAN-Extension Services | | | | |
| <input type="checkbox"/> 63. <input type="checkbox"/> T-1/T-3 Services | <input type="checkbox"/> 68. <input type="checkbox"/> OC-3/OC-12 | None of the above (1-71) | A | B | <input type="checkbox"/> 72. <input type="checkbox"/> |

9. Please indicate the Systems/Peripherals/Software/Applications/Business Services that you are currently involved in purchasing or plan to purchase: (check ALL that apply) A. Currently involved in purchasing B. Plan to purchase

- | | | | | | |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---|---|-------------------------------------------------------|
| SYSTEMS/PERIPHERALS | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 01. <input type="checkbox"/> Laptops/Notebooks | <input type="checkbox"/> 06. <input type="checkbox"/> Fax Servers | <input type="checkbox"/> 10. <input type="checkbox"/> Mainframes | | | |
| <input type="checkbox"/> 02. <input type="checkbox"/> Desktops | <input type="checkbox"/> 07. <input type="checkbox"/> Remote Access Servers | <input type="checkbox"/> 11. <input type="checkbox"/> Printers | | | |
| <input type="checkbox"/> 03. <input type="checkbox"/> Intel-Based Servers | <input type="checkbox"/> 08. <input type="checkbox"/> Video Servers | <input type="checkbox"/> 12. <input type="checkbox"/> Enclosures/Racks/Furniture | | | |
| <input type="checkbox"/> 04. <input type="checkbox"/> Risc-Based Servers | <input type="checkbox"/> 09. <input type="checkbox"/> Mid-Range Systems (including workstations) | <input type="checkbox"/> 13. <input type="checkbox"/> Other Computers/Peripherals | | | |
| <input type="checkbox"/> 05. <input type="checkbox"/> Print Servers | | | | | |
| SOFTWARE/APPLICATIONS | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 14. <input type="checkbox"/> Desktop/Server Operating Systems | <input type="checkbox"/> 20. <input type="checkbox"/> Database Management Systems | <input type="checkbox"/> 25. <input type="checkbox"/> Middleware | | | |
| <input type="checkbox"/> 15. <input type="checkbox"/> Network Management | <input type="checkbox"/> 21. <input type="checkbox"/> Customer Resource Management (CRM) | <input type="checkbox"/> 26. <input type="checkbox"/> Document Management Tools | | | |
| <input type="checkbox"/> 16. <input type="checkbox"/> Systems Management | <input type="checkbox"/> 22. <input type="checkbox"/> Enterprise Resource Planning (ERP) | <input type="checkbox"/> 27. <input type="checkbox"/> Site Metering Tools | | | |
| <input type="checkbox"/> 17. <input type="checkbox"/> Directory Services | <input type="checkbox"/> 23. <input type="checkbox"/> XML Tools | <input type="checkbox"/> 28. <input type="checkbox"/> Software Distribution Tools | | | |
| <input type="checkbox"/> 18. <input type="checkbox"/> E-Mail | <input type="checkbox"/> 24. <input type="checkbox"/> Desktop Videoconferencing | <input type="checkbox"/> 29. <input type="checkbox"/> Data Warehousing | | | |
| <input type="checkbox"/> 19. <input type="checkbox"/> Groupware | | <input type="checkbox"/> 30. <input type="checkbox"/> Applications Development Tools | | | |
| | | <input type="checkbox"/> 31. <input type="checkbox"/> Other Software/Applications | | | |
| BUSINESS SERVICES | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 32. <input type="checkbox"/> Application Service Provider Services | <input type="checkbox"/> 33. <input type="checkbox"/> Systems Integration/Consulting | <input type="checkbox"/> 35. <input type="checkbox"/> Other Services | | | |
| | <input type="checkbox"/> 34. <input type="checkbox"/> Education/Training Services | None of the above (1-35) | A | B | <input type="checkbox"/> 36. <input type="checkbox"/> |

10. Please indicate the platforms that are currently installed/planned: (check ALL that apply) A. Currently installed B. Planned for purchase

- | | | | | | |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---|---|-------------------------------------------------------|
| NETWORK PROTOCOLS | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 01. <input type="checkbox"/> TCP/IP v4 | <input type="checkbox"/> 03. <input type="checkbox"/> SNA/APPC/APPN/LU6.2 | <input type="checkbox"/> 05. <input type="checkbox"/> NETBIOS/NETBUEI | | | |
| <input type="checkbox"/> 02. <input type="checkbox"/> TCP/IP v6 | <input type="checkbox"/> 04. <input type="checkbox"/> Novell IPX/SPX | <input type="checkbox"/> 06. <input type="checkbox"/> NFS | | | |
| | | <input type="checkbox"/> 07. <input type="checkbox"/> Other Network Protocols | | | |
| LAN/WAN ENVIRONMENT | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 08. <input type="checkbox"/> Gigabit Ethernet | <input type="checkbox"/> 13. <input type="checkbox"/> Token Ring/Token Ring Switching | <input type="checkbox"/> 18. <input type="checkbox"/> DSL | | | |
| <input type="checkbox"/> 09. <input type="checkbox"/> Switched Ethernet | <input type="checkbox"/> 14. <input type="checkbox"/> Layer 3-7 Switching | <input type="checkbox"/> 19. <input type="checkbox"/> ISDN | | | |
| <input type="checkbox"/> 10. <input type="checkbox"/> Fast Ethernet | <input type="checkbox"/> 15. <input type="checkbox"/> FDDI | <input type="checkbox"/> 20. <input type="checkbox"/> Frame Relay | | | |
| <input type="checkbox"/> 11. <input type="checkbox"/> Ethernet | <input type="checkbox"/> 16. <input type="checkbox"/> Fibre Channel | <input type="checkbox"/> 21. <input type="checkbox"/> Private Line T1, T3, OC-3, OC-12 | | | |
| <input type="checkbox"/> 12. <input type="checkbox"/> ATM | <input type="checkbox"/> 17. <input type="checkbox"/> Wireless LANs | <input type="checkbox"/> 22. <input type="checkbox"/> Other LAN/WAN Environment | | | |
| DESKTOP/SERVER OPERATING SYSTEMS | | | | | |
| A | B | A | B | A | B |
| <input type="checkbox"/> 23. <input type="checkbox"/> Windows 2000 | <input type="checkbox"/> 28. <input type="checkbox"/> Intel based UNIX | <input type="checkbox"/> 34. <input type="checkbox"/> Palm OS | | | |
| <input type="checkbox"/> 24. <input type="checkbox"/> Windows 95/98 | <input type="checkbox"/> 29. <input type="checkbox"/> RISC based UNIX (incl. SOLARIS) | <input type="checkbox"/> 35. <input type="checkbox"/> Windows CE | | | |
| <input type="checkbox"/> 25. <input type="checkbox"/> Windows NT/Windows 2000 | <input type="checkbox"/> 30. <input type="checkbox"/> IBM MVS/VM/VSE/ESA | <input type="checkbox"/> 36. <input type="checkbox"/> Other Network Operating System | | | |
| <input type="checkbox"/> 26. <input type="checkbox"/> Novell (NetWare 5.X, 4.X, 3.X, 2.X) | <input type="checkbox"/> 31. <input type="checkbox"/> OS/400 | | | | |
| <input type="checkbox"/> 27. <input type="checkbox"/> LINUX | <input type="checkbox"/> 32. <input type="checkbox"/> Digital VMS | None of the above (1-36) | A | B | <input type="checkbox"/> 37. <input type="checkbox"/> |
| | <input type="checkbox"/> 33. <input type="checkbox"/> Macintosh | | | | |

Continued on next page...

Continued from page one...

5. What is the total number of Servers/Clients installed/planned at your location/in your entire organization? (check ONE box in each column)

SERVERS		CLIENTS	
At Location	Entire Org.	At Location	Entire Org.
A	B	C	D
<input type="checkbox"/> 1. 50,000+	<input type="checkbox"/>	<input type="checkbox"/> 1. 50,000+	<input type="checkbox"/>
<input type="checkbox"/> 2. 10,000 to 49,999	<input type="checkbox"/>	<input type="checkbox"/> 2. 10,000 to 49,999	<input type="checkbox"/>
<input type="checkbox"/> 3. 1,000 to 9,999	<input type="checkbox"/>	<input type="checkbox"/> 3. 1,000 to 9,999	<input type="checkbox"/>
<input type="checkbox"/> 4. 100 to 999	<input type="checkbox"/>	<input type="checkbox"/> 4. 100 to 999	<input type="checkbox"/>
<input type="checkbox"/> 5. 50 to 99	<input type="checkbox"/>	<input type="checkbox"/> 5. 50 to 99	<input type="checkbox"/>
<input type="checkbox"/> 6. 10 to 49	<input type="checkbox"/>	<input type="checkbox"/> 6. 10 to 49	<input type="checkbox"/>
<input type="checkbox"/> 7. 1 to 9	<input type="checkbox"/>	<input type="checkbox"/> 7. 1 to 9	<input type="checkbox"/>
<input type="checkbox"/> 8. none	<input type="checkbox"/>	<input type="checkbox"/> 8. none	<input type="checkbox"/>

6. What is your scope and involvement in purchasing decisions for network products and services for your enterprise?

A. Scope (check ONE only)	B. Involvement (check ALL that apply)
CORPORATE/ENTERPRISE: 1. <input type="checkbox"/> Entire Enterprise/ Multiple Enterprises	1. <input type="checkbox"/> Create Network/IT Strategy
2. <input type="checkbox"/> Multinational Enterprise	2. <input type="checkbox"/> Recommend/Specify Brand
3. <input type="checkbox"/> Division/Multiple Divisions	3. <input type="checkbox"/> Approve Purchase
4. <input type="checkbox"/> Department	4. <input type="checkbox"/> Evaluate Products/Services
5. <input type="checkbox"/> None	5. <input type="checkbox"/> Determine the Need
	6. <input type="checkbox"/> None

7. What is the estimated number of employees in your entire organization/at your location? (check ONE in each section)

A. Entire organization:	B. At your location:
1. <input type="checkbox"/> Over 20,000	1. <input type="checkbox"/> Over 20,000
2. <input type="checkbox"/> 10,000 - 19,999	2. <input type="checkbox"/> 10,000 - 19,999
3. <input type="checkbox"/> 5,000 - 9,999	3. <input type="checkbox"/> 5,000 - 9,999
4. <input type="checkbox"/> 2,500 - 4,999	4. <input type="checkbox"/> 2,500 - 4,999
5. <input type="checkbox"/> 1,000 - 2,499	5. <input type="checkbox"/> 1,000 - 2,499
6. <input type="checkbox"/> 500 - 999	6. <input type="checkbox"/> 500 - 999
7. <input type="checkbox"/> 499 or less	7. <input type="checkbox"/> 250 - 499
	8. <input type="checkbox"/> 100 - 249
	9. <input type="checkbox"/> 99 or less

11. Which of the following hardware platforms are installed/planned in your company? (check ALL that apply)

A - Servers	B - Workstations/Desktops/Laptops
1. <input type="checkbox"/> IBM (Mainframes)	1. <input type="checkbox"/> Sun Microsystems
2. <input type="checkbox"/> IBM RS/6000	2. <input type="checkbox"/> H-P
3. <input type="checkbox"/> IBM AS/400	3. <input type="checkbox"/> Compaq/Digital
4. <input type="checkbox"/> Compaq/Digital/ Tandem	4. <input type="checkbox"/> IBM
5. <input type="checkbox"/> Unisys	5. <input type="checkbox"/> Dell
6. <input type="checkbox"/> H-P	6. <input type="checkbox"/> Gateway
7. <input type="checkbox"/> Other	7. <input type="checkbox"/> Fujitsu
	8. <input type="checkbox"/> Other

12. What is the estimated gross revenue of your entire company/institution? (check ONE only)

1. <input type="checkbox"/> \$20 Billion or More	5. <input type="checkbox"/> \$100 Million to \$499.9 Million	9. <input type="checkbox"/> \$4.9 Million or Less
2. <input type="checkbox"/> \$10 Billion to \$19.9 Billion	6. <input type="checkbox"/> \$50 Million to \$99.9 Million	10. <input type="checkbox"/> None of the above
3. <input type="checkbox"/> \$1 Billion to \$9.9 Billion	7. <input type="checkbox"/> \$10 Million to \$49.9 Million	
4. <input type="checkbox"/> \$500 Million to \$999.9 Million	8. <input type="checkbox"/> \$5 Million to \$9.9 Million	

13. For which areas outside of the U.S.A. do you have purchase influence? (check ALL that apply)

1. <input type="checkbox"/> Europe	3. <input type="checkbox"/> South America	5. <input type="checkbox"/> Middle East	7. <input type="checkbox"/> Canada
2. <input type="checkbox"/> Asia	4. <input type="checkbox"/> Australia	6. <input type="checkbox"/> Africa	8. <input type="checkbox"/> None

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PHONE NUMBER _____	PHONE NUMBER _____
NAME _____	NAME _____
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E-MAIL ADDRESS _____	E-MAIL ADDRESS _____
PHONE NUMBER _____	PHONE NUMBER _____

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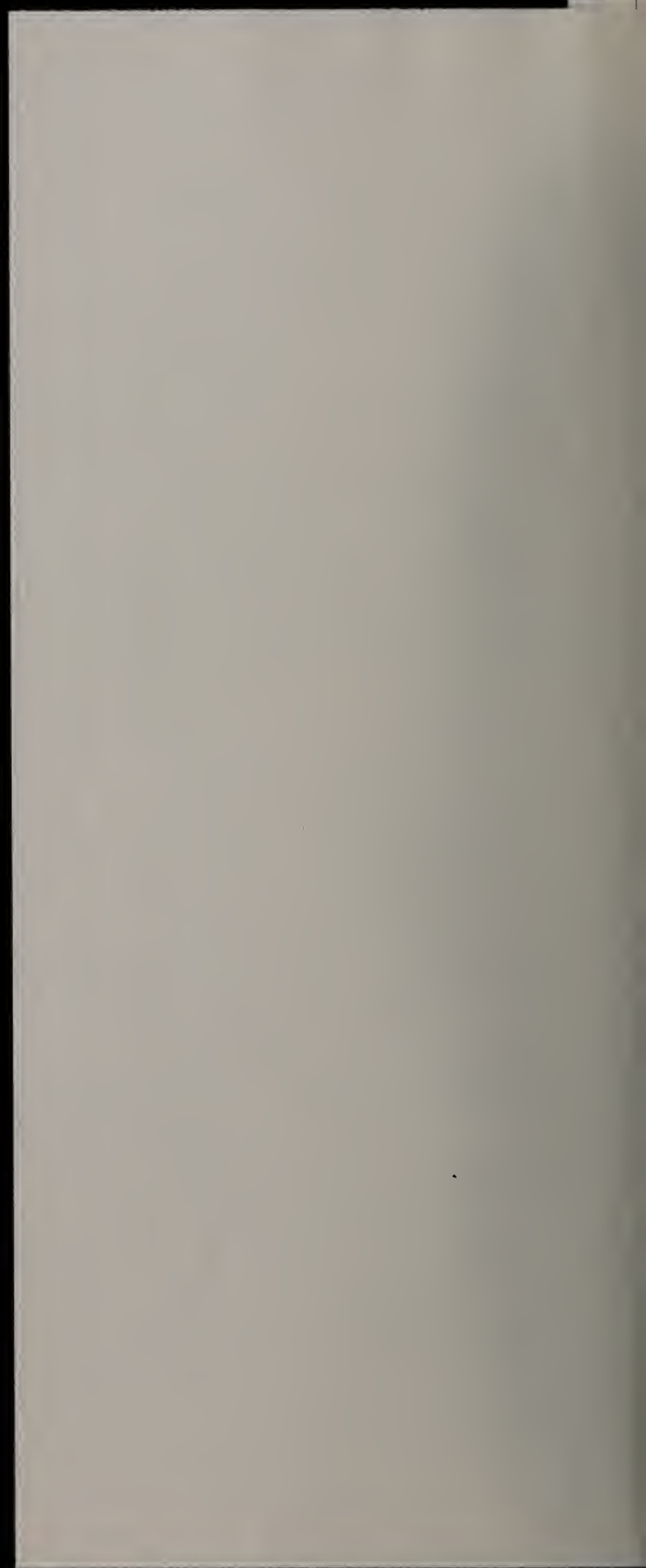
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Infrastructure

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 ■ ACCESS DEVICES ■ CLIENTS
 ■ SERVERS ■ OPERATING SYSTEMS
 ■ VPNS ■ NETWORKED STORAGE

Short Takes

■ A Linux operating system for desktop PCs developed by **Corel** is set to make a comeback in April, according to the start-up that licensed the technology last year. Founded on Corel's technology, **Xandros** is preparing to take the wraps off its Linux desktop operating system. Xandros licensed Corel's Linux distribution in August with \$10 million in backing from Linux Global Partners, an incubator that has financed many Linux software makers, including Ximian. Xandros has yet to announce the pricing of its desktop product. Xandros will also offer office productivity applications, Internet access services and other applications for **Xandros Desktop**. www.xandros.net

■ **3Com** recently unveiled high- and low-end wireless access points for 802.11b networks. The low-end products are designed to let users quickly set up small and very inexpensive 11M bit/sec wireless LANs. At the high end, 3Com has added a range of security and management features for enterprise deployments. Both products include an HTTP server and feature a Web browser-based administration interface. Once the device is plugged into a wall outlet the built-in Ethernet LAN software automatically finds and selects the least crowded of the three 802.11b channels available to it, within a maximum range of 328 feet. The company says the device will support up to 128 wireless users. The high-end **AP 8000** includes several long-range antenna options to extend the device's range to 1,000 feet and a program called Site Survey Utility that figures out how many access points are needed and where. Many security and encryption schemes are incorporated in the device, including the basic 40-bit wireless encryption protocol encryption and 128-bit shared key encryption; and the Remote Authentication Dial-In User Service protocol, which works with a central authentication server. The AP 2000 has a list price of \$230, and the AP 8000 is priced at \$600. Both are available now. www.3com.com

CDNs taking on enterprise role

Content-delivery networks promise to deliver cost savings for private networks.

■ BY JENNIFER MEARS

Many network professionals may still think of a content delivery network as simply a system of public caching servers that sit at the edge of the Internet. But increasingly, customers are finding Web traffic can be applied to a private WAN.

However, installing an enterprise CDN (eCDN) isn't as easy as putting caches in various locations on your network. It can be expensive, and it can get complicated. But if you determine that an eCDN makes good business sense and then structure it to fit in with your existing architecture, it can be well worth the effort, observers say.

Take Siemens Medical Solutions Health Services. The healthcare IT division of Siemens delivers applications, professional services and outsourcing to more than 5,000 healthcare organizations worldwide. Siemens Health Services wasn't satisfied with the way applications performed over its network. It was tired of having extra servers standing by to handle spikes in traffic while its network still hovered around 90% availability.

So it installed Cisco content-delivery devices to push content out to the edge of its network. With its internal CDN, Siemens Health Services boasts 99.998% network availability and has reduced server costs by more than 80%, says Michael Alban, strategic alliance manager at Siemens Health Services.

"But one can argue that content delivery isn't for everyone," he adds. "It's a question that we had to answer ourselves. You have to look at content delivery and ask if you have an existing network in place that you can take advantage of. And the bottom line is what's the business value you gain by deploying your own content network."

Content considerations

There are a number of things customers must consider before investing in an internal CDN. One of the first things to think about is whether your business has applications that require content-delivery devices, says Dot Powers, advisory network specialist for Siemens Health Services and a Cisco Certified Inter-networking Expert.

Analysts say the application that is driving the adoption of internal CDNs is streaming media for online training or

See CDNs, page 20

Distributing content

Ten things your enterprise CDN shouldn't be without:

- 1. Multiple application support.** The eCDN is an overlay to the existing network, so make sure it supports things such as content management, video on demand and live broadcasting.
- 2. Comprehensive architecture.** There should be a core server, edge servers and a database. Avoid proprietary systems.
- 3. Network analysis.** It should have the ability to automatically check available bandwidth, link speed and hop count.
- 4. Simple content publishing.** It should be easy to channel content to certain user groups or schedule downloads for certain times.
- 5. Intelligent content distribution.** The eCDN should find the best path automatically; avoid manually checking each network link.
- 6. Dynamic content delivery.** When a user makes a request the eCDN should automatically identify where the user is located and find the best way to deliver content.
- 7. Scalability.** Make sure the eCDN can handle big traffic loads and can be expanded easily if necessary.
- 8. Security.** Ask vendors how they're locking down edge servers and make sure the eCDN can handle things such as content encryption and user authorization.
- 9. Back-end management suite.** A policy-based management tool is a must because it enables you to direct how the eCDN integrates with the rest of the network.
- 10. Integrated end-user interface.** Single-point access to everything needed to run the eCDN smoothly.

SOURCE: DIGITAL PIPE, CDN FALL 2001

Linux users to toast Wine

■ BY DENI CONNOR

Users wishing to run Word, Internet Explorer or other Windows applications on non-Microsoft platforms can finally do so with software that a consortium of open source developers will roll out in the next three months.

Wine 1.0, in development by a group of voluntary programmers since 1993, is an implementation of Windows 3.X and Win32 that operates on top of Linux, Unix or X Windows workstations. Other features include:

- Support for Microsoft's Common Object Model and Distributed COM technologies, the latter of which lets applications communicate over a network securely and efficiently.
- The ability to mount shares on multi-user Samba systems, which give Linux desktop users access to file and print services that use Microsoft's Common Information File System.


- The capability for users to run Windows-based Lotus Notes messaging clients on Linux workstations.

Companies have tested prerelease versions of Wine, with some using Linux and Wine on their desktops to concurrently run Linux-based management tools and Windows-based desktop applications.

"Once [Wine] is stable enough, I could roll it out to users that already have Linux desktops," says Jacob Kennedy, a systems analyst for a company in the U.K. that he asked not be identified. This would let him deliver Word, Outlook and other Windows applications to end users with Linux on their desktops, he says.

Several companies, such as Codeweavers, and Transgaming, will offer distributions of Wine, packaged with installation scripts and documentation.

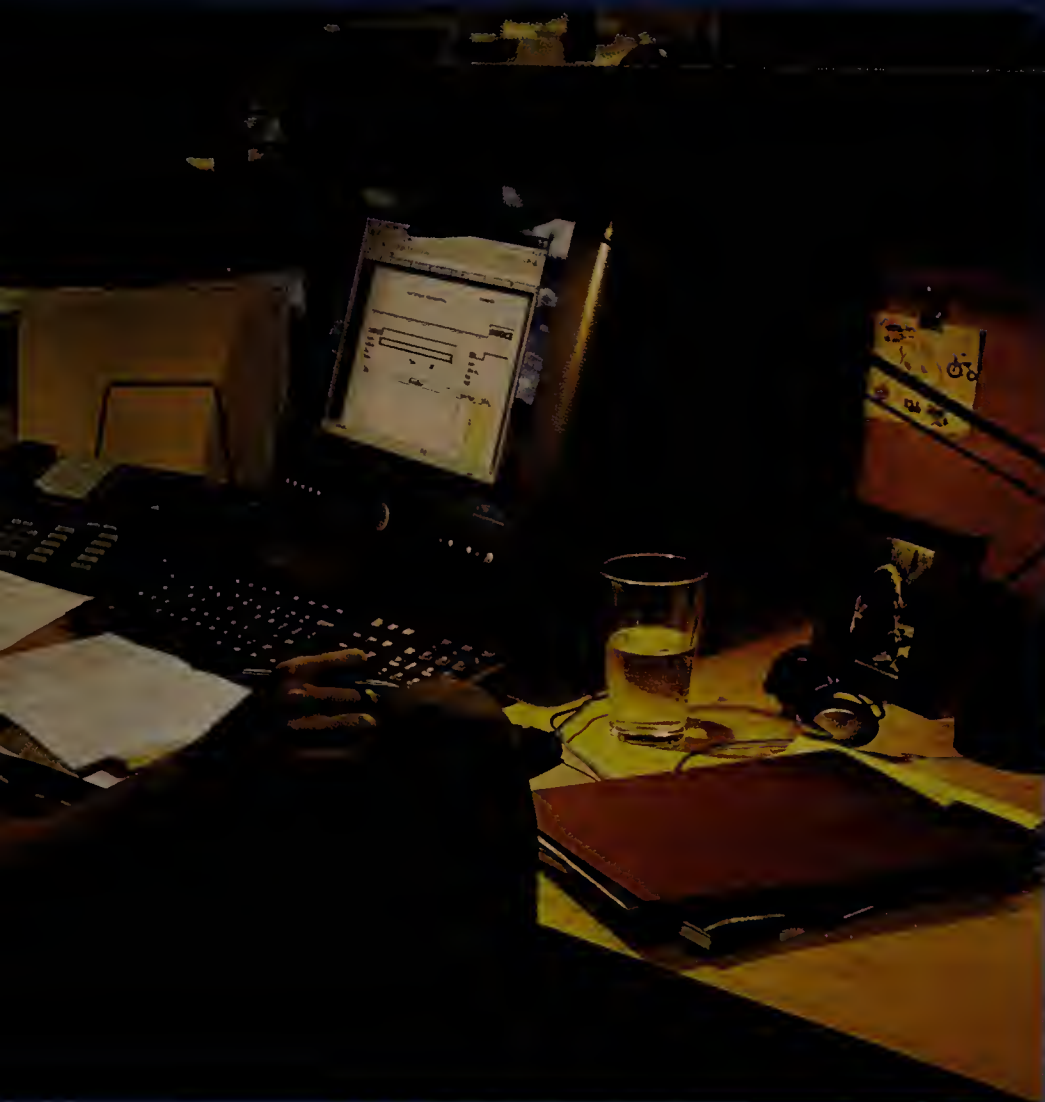
Wine runs on any version of Linux and can be downloaded from winehq.com, wine.codeweavers.com or www.transgaming.com.



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Will the real VPN please stand up?

were correct.

The problem is that VPN is a generic term, but one that has, over the years, acquired a fairly specific meaning — at least by those in the network security arena. Now leading-edge Multi-protocol Label Switching (MPLS) technology is delivering a capability that, though radically different, can legitimately be termed VPN as well.

So when we hear the term VPN bandied about, we need to know the implied modifier — is the reference to an IP Security VPN or an MPLS VPN. Time to understand the difference.

In its most generic sense, VPN implies technology that brings attributes of a private, leased-line network to data flows that are actually running across a public or quasi-public IP packet network. Two of the most important attributes are privacy and predictability.

Early on, security vendors devised a number of encapsulation/encryption approaches in an effort to deliver on the promise of privacy. The Layer 2 Tunneling Protocol and the Point-to-Point Tunneling

Protocol were early efforts promoted by the likes of Cisco and Microsoft.

Ultimately, and thankfully, the industry converged on the vendor-independent IPSec standard for secure tunneling. IPSec provides for authentication between endpoints and then coordinates the flow of encrypted traffic between them.

Because any third party seeing your traffic would see only the encrypted jumble, IPSec lets you have the security of a private network while enjoying the flexibility, robustness and economic benefits of using a shared network.

Paradoxically, an IPSec tunnel is not a tunnel at all — not, at least, in the “fixed” sense of having all traffic belonging to a particular session following the same set of router hops across the network. And that is where MPLS comes in.

The data paths on private networks are fixed. This is one of the great benefits of a circuit-based approach and one that, until recently, has been beyond the realm of possibility with packet networks.

Without such predictability, service providers can't easily deliver on service-

level agreements, and end-user network architects cannot feel comfortable running important, latency-sensitive applications across public packet networks.

MPLS solves that problem. By tagging traffic as it enters the edge of a WAN, MPLS-enabled switch/routers can make certain that particular flows traverse particular paths across a backbone network. The best part of this is that MPLS tagging can be generated on ingress to the network and stripped at the egress point without having to involve applications at all.

But MPLS does not encrypt your traffic. What, then, if someone wants the predictability of MPLS with the security of an encrypted IPSec flow? Because neither interferes with the other, it is possible and reasonable to run an IPSec VPN on top of an MPLS VPN. What more could you want?

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Manasquan, N.J. He can be reached at ktolly@tolly.com or www.tolly.com.

CDNs

continued from page 17

companywide CEO addresses. “Streaming media is the killer app for eCDNs,” says Greg Howard, principal analyst at HTRC Group.

A recent HTRC study of 200 large companies found that 35% handle streaming today and 42% will in 2002. Of companies doing streaming, more than half will build their own CDNs, the study found.

Other applications may also require an internal CDN. Siemens delivers clinical and financial applications for the healthcare industry. It was delivering a mainframe application with a browser-based interface, but because the application used a 2M-bit Java applet to run the browser, each time an update was needed the applet had to download, putting stress on the network. Because of security concerns, a public CDN wasn't an option, Alban says.

First, Siemens looked at its infrastructure to determine how an eCDN would fit. Powers says network managers should determine whether systems can easily integrate a content-delivery vehicle. If not, it may be more trouble than it is worth. For Siemens Health Services, the integration was easy, she says.

“We have a nice modular-type design in our infrastructure. We have an IP backbone, and we have applications that are very modular,” she says. “It was a real easy fit from an architectural perspective.”

Application support is key

Application support is an important part of any eCDN, adds Evan Richman, vice president of business development at content networking software provider Digital Pipe. That means making sure the network

can support things such as video on demand, live streaming and content management tools. Companies should also determine whether the network architecture can, or will, support applications such as collaboration and database replication.

Another thing to think about is whether the content network architecture is scalable, Richman says. “You're investing in another level of infrastructure, and you want to look at this as a long-term asset that can really grow,” he says.

Siemens Health Services is expanding its CDN by adding content switches at the core of its network. Its content networking devices include Cisco content switches, which sit next to Web servers and in front of application and database servers, at the core of the network. A Cisco content engine, which caches content, is then placed in the data center of each healthcare organization accessing applications from Siemens.

Other issues

Powers says it's a good idea to take an inventory of your IT team and determine whether you have the skills to configure application delivery on a CDN.

“Our server team has an in-depth understanding of the rules that they need to configure for the delivery of content. The rules are based on information that is deeper in the packet: Layer 4 and above,” she says. “I am a network professional, and it would be difficult for me to come up with a really good set of Layer 4 and above rules for our applications, so I work with our server team.”

Alban notes Siemens did not have to add staff to support its eCDN.

“Other enterprises might not have the luxury. So it's an important thing to consider,” he says. “Then weigh all the expense against

the cost of adding servers and adding potential bandwidth.”

Another issue companies should consider when installing internal CDNs is how the content network devices analyze the network and route content. This is a must for eCDNs, Richman says, because most content moving over an eCDN will be targeted for specific users, rather than being open to anyone.

The eCDN architecture should include back-end management that intelligently routes content and integrates with other enterprise systems, and an integrated user interface that lets network managers keep an eye on how content and applications

are moving. The bottom line, he says, is that an eCDN should make a network manager's life easier, not more difficult.

“You shouldn't have to have a lot of resources to deploy and manage these things,” he says.

Digital Pipe: www.digitalpipe.com



More online!

How content-delivery technology is predicted to play an important role as organizations become more Web-enabled.

DocFinder: 7931

Prototype phone boosts speech recognition quality

■ BY GEORGE CHIDI, JR.

Motorola and speech recognition software maker SpeechWorks International have developed a prototype phone they say will help computers better decipher wireless signals for clearer transmissions.

Mobile speech recognition technology generally requires that a speaker's voice be transmitted through a wireless network to a stationary computer for processing.

When a mobile phone user is in a bad spot in a network, say, in a building or on the edge of a service provider's coverage area, some voice fidelity is lost. A computer trying to perform voice recognition processing on a garbled transmission would be more likely to fail. The limitations of wireless phone network signal transmissions compound the problem. A voice call cannot use the same redundant transmissions meant to guarantee Internet packet delivery.

Motorola and SpeechWorks' prototype is meant to attack the signal problem at the source. The processor cleans up the voice signal, performing the digital equivalent of the signal. A server running SpeechWorks software can process the clarified signal more easily.

The experimental phone uses a field-force automation application, letting a traveling sales representative check accounts by speaking into a handheld device.

The phone could hit the market in 12 to 18 months, the companies say.

Chidi is a correspondent with the IDG News Service's Boston bureau.

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Cisco VMS Version 2.0

Cisco upgrades security management suite, but tool integration lags.

■ BY JOEL SNYDER, NETWORK WORLD GLOBAL TEST ALLIANCE

VPN/Security Management Solution Version 2.0 (VMS 2.0) is Cisco's latest foray into security and VPN management. It's four Cisco management tools in one box, with coordinated installation and release notes.

Cisco's last attempt at bundling these tools had limited success. In this release, each stand-alone product performs well. We were impressed with the progress Cisco made in firewall and VPN tools that we previously reviewed (www.nwfusion.com, DocFinder: 7926).

However, the individual products are far from integrated. VMS Version 2.0 has four components:

1. Cisco Secure Policy Manager (CSPM) Version 3.0 is a new version of the company's firewall and VPN configuration tool that generates and downloads configurations into Cisco IOS and PIX devices.

2. Intrusion detection is managed through CSPM Version 2.3, which has been enhanced to support both network- and host-based intrusion detection systems.

3. VPN monitoring, alerting and reporting are covered in a separate tool, CiscoWorks2000 VPN Monitor.

4. All other management functions are part of CiscoWorks2000, which includes device inventory, logging, availability, software management and configuration control.

CSPM 3.0 is easy to use, both with new and existing devices. (For details on the products we used to test VMS 2.0, see www.nwfusion.com, DocFinder: 7935.) First, you define your network topology by drawing a map and putting in Cisco (and non-Cisco) devices. Then, you use a simple tool to define rules: what traffic is allowed and what is not.

CSPM 3.0 uses the rules you create to generate commands for all the affected devices, automatically computing which ones need to be changed and how. CSPM

3.0 downloads the changed configurations to each device (either automatically or after you approve the changes) and you're done.

CSPM 3.0 understands your network topology, so it knows which devices need to be updated and how. Once you've taught CSPM 3.0 your network topology, you don't have to worry about which devices are in the path between different kinds of traffic.

CSPM 3.0 supports fully meshed and hub-and-spoke VPNs. The VPN topology is a virtual one, layered on top of the physical network topology. You define VPNs by adding nodes to VPN tunnel groups and checking a box on any firewall rule to send that traffic through the VPN.

This style of VPN brings Cisco up to speed with other VPN management vendors, such as Avaya, NetScreen Technologies and Nokia, but there's a catch. It's quite difficult to simply say "tunnel everything between every VPN node." CSPM 3.0 is much more focused on firewalling traffic, with VPN an option, than on building VPNs and firewalls in parallel.

Some pieces of VPN management are still missing. Although CSPM 3.0 lets you select from the three Internet Key Exchange authentication schemes, there is no help for the difficult task of defining and managing certification authorities, certificate authority trust relationships, or requesting and managing digital certificates.

Cisco has greatly simplified the job of building complex access lists and network address translation configurations in its IOS and PIX systems, something network managers have hoped for.

Net Results

VPN/Security Management Solution Version 2.0

3.65
RATING

Company: Cisco Systems, www.cisco.com **Cost:** A license for 10 managed devices is \$8,000. **Pros:** Offers simplified management of security policy across multiple networks; defines both mesh and hub-and-spoke VPNs within one GUI; PIX configurations with new security policies. **Cons:** Lack of coordination and central directory between product components; CSPM Version 3.0 still too complex; can't build VPNs without thinking in firewall terms and traffic flows.

What's the score?

VPN/Security Management Solution Version 2.0

Enterprise-quality configuration 30% 4.0

Ease of use/documentation 25% 3.0

Scalability 20% 3.5

Management 15% 4.0

Performance 10% 4.0

TOTAL SCORE 3.65

Individual category scores are based on a scale of 1 to 5. **Percentages** are the weight given each category in determining the total score. ■ **Scoring Key:** 5: Exceptional showing in this category. Defines the standard of excellence. 4: Very good showing. Although there may be room for improvement, this product was much better than the average. 3: Average showing in this category. Product was neither especially good nor exceptionally bad. 2: Below average. Lacked some features or lower performance than other products or than expected. 1: Consistently subpar, or lacking features being reviewed.

Not so much integration

In this release of VMS, network- and host-based intrusion detection system devices are managed using a different version of CSPM, Version 2.3, which must run on a different server from CSPM 3.0. While the functions of managing firewall/VPN and intrusion detection are generally separate, this separation can be a problem for network managers who implement Cisco's "shunning" feature.


With shunning, intrusion detection system alerts actually cause configuration changes in firewalls and routers, and block traffic from those networks. Because shunning is handled through different configuration tool, network managers trying to debug and analyze configurations using CSPM 3.0 aren't looking at the whole picture.

A second functionality gap occurs between the VPN Monitor and VPN configuration tools in CSPM 3.0. VPN Monitor is a Web-based tool built into CiscoWorks2000. With VPN Monitor, you can track, report and alert on VPN tunnels. More than a dozen statistics, including throughput, resource consumption and failure rates, can be logged and graphed. VPN Monitor also generates alerts when network manager-defined thresholds are crossed.

CSPM 2.3, CSPM 3.0 and CiscoWorks2000 maintain separate device inventories. This means that if you define a VPN in CSPM 3.0, you must redefine the topology in VPN Monitor by hand. If you want devices on CSPM 3.0 to participate in the intrusion detection system configuration, you also have to redefine the topology in CSPM 2.3. In this case, the integration that VMS 2.0 provides simply means that all the pieces shipped in the same box.

With VMS 2.0, Cisco has released an outstanding suite of applications. CSPM 3.0 is what network managers have been waiting for, CSPM 2.3 adds host-based intrusion detection system functionality to the existing network-based intrusion detection system, and CiscoWorks2000 comes with tools no Cisco manager should be without. It would be nice if they all worked together a little better.

Snyder, a Network World Test Alliance partner, is a senior partner at Opus One in Tucson, Ariz. He can be reached at Joel.Snyder@opus1.com.



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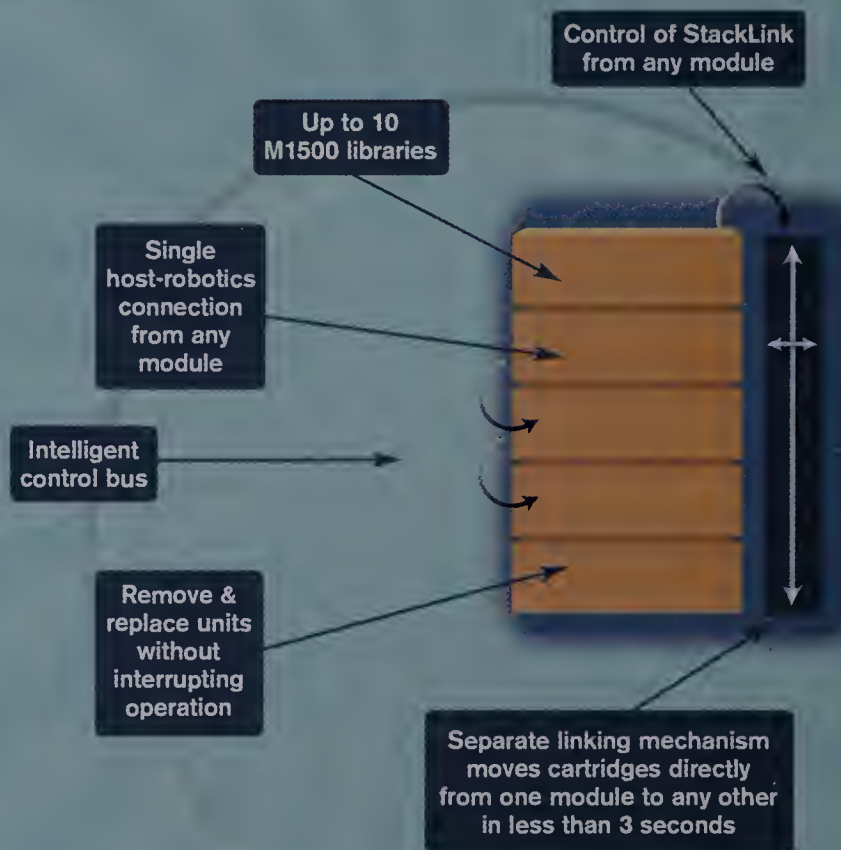


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Enterprise Applications

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Short Takes

■ **IBM** recently released software that makes it easier to integrate e-commerce Web sites with portals, letting companies offer information and transactional capabilities from a single user interface. Big Blue is providing the integration capabilities between its **WebSphere Commerce Suite Pro 5.1** and **WebSphere Portal** using small pieces of code that add commerce functions, such as online catalog searches, to the portal. IBM says its software will make online corporate offerings more efficient by putting information, collaboration and transactional capabilities all in one place. The software is available now. Customized installations will likely cost between \$50,000 and \$75,000. www.ibm.com

■ **Quest Software** has consolidated several of its Oracle database management tools into a unified product called **Quest Central for Oracle**. The package includes tools for daily tuning and monitoring. The product is composed of three modules for storage, performance and availability management. Each module includes Quest tools related to those areas, such as Spotlight and StorageXpert. Price per server ranges from \$11,000 to \$110,000 for the performance module and \$5,000 to \$105,000 for the storage pack. The product will ship late in the second quarter. Pricing information is not available. www.quest.com

■ **TruSecure** last week acquired managed infrastructure security company **Three Pillars**. The terms of the all-stock deal were not disclosed. TruSecure offers a suite of security services that include audits, security recommendations and monitoring, and will integrate Three Pillars' line of remote management and monitoring services into its product set. Three Pillars has a device that resides at the customer's location, allowing for data collection and correlation, meaning that TruSecure may be able to move into more proactive security services. www.trusecure.com, www.threepillars.com

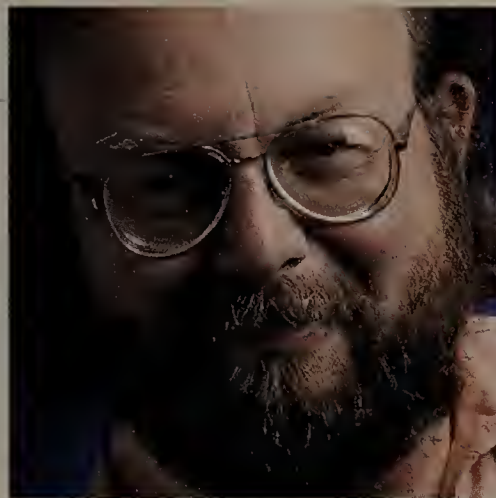
Q & A

Sun exec looks at Web services and beyond

Sun Vice President James

Gosling, the creator of Java, knows a thing or two about software revolutions. Gosling recently sat down with Network World Senior Editor John Fontana to talk about the buzz around Web services, a technology being hyped as a savior for distributed computing.

You've said the business of building systems that talk to each other has been around for a long time. Does Web services revolutionize it?



It's sort of yes and no. The hard part has been getting people who are competitors to agree on how to interconnect things. The XML world, because it is so flexible and platform neutral, has gotten a lot of the players in various games to say this would be a good idea. People have been building Web services in some sense for years, but the thought is that they have been doing it with stone axes. People who have built Web sites have exposed their service using something that is intended for direct human consumption and not intended for consumption by other systems. There has been

a general realization that there is actually value in allowing other people access to your service through software, to allow somebody else's software to talk to your software.

What are the challenges facing Web services?

Certainly security is an issue, and security's evil twin, authentication. Actually, for my money, the really hard problem is the politics behind these standard schemas. Because Web services only work if you can get, for example, Travelocity and Expedia to agree to use a common

See Gosling, page 28

Upstart software firm is simply, divine

■ BY JENNIFER MEARS

Mitsubishi Electronic Automation has been using Participant Server content management software since the summer of 2000 to streamline the administration of its business-to-business Web store and distributor extranet. It's been happy with the technology, but it's not getting the software from Eprise anymore.

Today, Participant Server is one of a myriad of technologies available from upstart software and services firm divine. While divine may not be a household name today, analysts say it's a company large customers should be watching.

Divine is the latest venture for Andrew Filipowski, who built Platinum Technologies into a software powerhouse before selling it to Computer Associates in 1999. Filipowski built Platinum through acquisitions and he's taking the same path with divine.

Filipowski launched divine as an Internet holding company, but switched gears early last year with the purchase of enterprise information portal vendor SageMaker. With that acquisition, divine headed down the

road of assembling a software and services company designed to serve Web-enabled businesses. Mitsubishi Electronic Automation is among divine's customer base of 20,000 companies.

Divine's acquisitions have brought it technology and expertise that run the gamut from network hosting services and professional services to collaboration and content management. Last year, divine acquired professional services and hosting firm marchFirst, content management and e-commerce companies Open Market, Eprise and RoweCom, and managed hosting provider Data Return, among others. Analysts say it acquired more than 30 companies last year.

Sue Feldman, an analyst at IDC, says companies should "absolutely" be watching divine, especially in regard to its content-related offerings. Last month, divine acquired assets from search and content vendor Northern Light. With the acquisition, divine offers Northern Light's search technology and its Special Collection online library of more than 7,100 sources, including *Forbes*, *Business Week* and *The New York Times*.

PROFILE: DIVINE

Location: Chicago

Founded: 1999

Products: Professional services, collaboration and content management software, managed services.

Founder and CEO: Flip Filipowski

Financing: Posted \$13.7 million in revenue and a \$111.5 million net loss for the quarter ended Sept. 30, 2001. Cash on hand at that time was reported to be \$175.8 million.

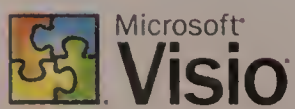
Employees: More than 3,000

Customers: United Airlines, CitiBank and J.C. Penney.

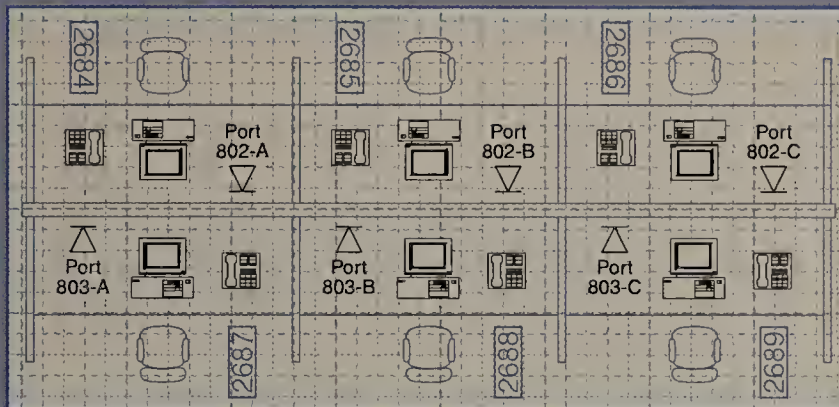
Fun Fact: Filipowski launched Divine as a holding company after selling Platinum Technologies to Computer Associates for \$3.5 billion.

Feldman says content management is a growing concern for large companies as the amount of digital information

See divine, page 28



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Microsoft

A

Gosling

continued from page 25

framework, a common XML schema, to express the services they provide.

Something like RosettaNet is doing by producing these agreed upon schemas for representing data?

Right. Just the intercompany politics of getting all these guys to agree. It's not one major source of pain. It's sort of diffused pain, because the same thing has to happen all over the place. And I think the wonderful thing is that it seems to be happening. I had dinner last night with a bunch of people from the oil industry, and they are actively working with a bunch of their competitors to define standard schemas. And that is not a problem that any computer vendor can fix.

How real is the threat of complexity to Web services? People always use the word simple when describing Web services interfaces, but when you start to talk about security, transactional integrity, then things can get complex.

Complexity is a huge problem. To the people who are doing the engineering, it is a huge deal. The real challenge for the vendors in the Web services space is to make that complexity simple. For some of these things, there is actually an unbelievable amount of "hair" to making it actually work. But you have to expose it in a way that makes it really simple.

Where is the intersection of Java and Web services? How does someone doing one understand how the two work together?

The problem is actually in the phrasing of that question, because you make it sound like Java and Web services are two separate things and you have to make them work together. That is not the case. Java in a sense is a building material, not unlike lumber and nails. Web services is essentially a style of putting them together to build structures. The fundamental qualities of Java are still there but the result of the data may be expressed in XML and carried by a [Simple Object Access Protocol] message. So you are basically creating a shim or a piece that is being combined with Java so you can pass on that functionality to some other system. One of the things that Java was designed to do from the very beginning is network communication. There is this huge stack of network communication protocols, such as IP, [Simple Mail Transfer Protocol], [Internet Message Access Protocol] and [Post Office Protocol] and then you get into [Remote Method Invocation] and [Common Object Request Broker Architecture]. SOAP is just another one of the protocols and it uses XML as its data representation.

How is Sun's view of Web services different than Microsoft's? Are there fundamental differences in what can be accomplished or how they are used?

I think at that level our views are pretty similar. In that it's

something that people can use to allow their systems to interoperate with those coming from the outside, and on the flip side of that, to get out and interoperate with people on the outside.

What about from a platform perspective Java 2 Platform Enterprise Edition vs. .Net?

.Net has always felt like an attempt at an answer to J2EE. There is just a huge amount of facilities available on the part of J2EE. Actually, I think there is a lot more in J2EE than in .Net. Transaction management, persistence, database integration, all the XML stuff is there in J2EE and has been for some time. J2EE is a market, not a product. There are a lot of vendors out there that implement J2EE. And there are a lot of add-on products that plug into J2EE. By the magic of the way the platform works, they all work together.

In one of Gartner's latest [surveys], it listed Sun and Oracle as niche players in the Web services market. IBM and Microsoft were listed as leaders. What is your reaction to that?

There are certain truths and certain falsities. In terms of things that are certain products, you can probably fairly label us a niche player in my view. Where we gain most of our revenue is a pretty big niche, however. Most of it comes from selling big honking servers in the infrastructure. But from an industry participation point of view, we are all over the map because our systems can't exist as islands. ■

Web sites test .info names

■ BY CAROLYN DUFFY MARSAN

Domain names with the .info extension are gaining popularity among corporate customers, who are using them to point Web site visitors to detailed information about particular products or brands.

Among the corporations that recently launched Web sites with the .info extension are automakers Subaru and Jaguar, Australian network firm RedSheriff and the New York Metropolitan Transit Authority. Many of these companies have purchased a .info name for a particular brand — such as Subaru's wrx.info for its WRX model — and that name points to the part of the company's existing Web site with information about that brand.

Afilias, the consortium of 18 domain name registrars running the .info registry, says more than 700,000 .info names have been registered since they became available last July.

"Eighty percent of the top 100 brands have been registered," says Roland LaPlante, chief marketing officer for Afilias. "Now that the registry has been live for three or four months, we're seeing actual Web sites being built. We knew from our research that [companies] would be attracted to .info sites because they feel they're more educational and informational than standard .com names."

The .info names also appear easier for consumers to remember. The New York Metropolitan Transit Authority replaced its original domain name — mta.nyc.ny.us — with the snappier mta.info and traffic to the site

ballooned from 200,000 hits a day to 3.5 million hits a day. The new mta.info site went live in October, so the site also benefited from an increased interest in status information about New York City's bridges, roads and subway systems after the Sept. 11 terrorist attacks.

"The MTA did a significant advertising program on radio and TV, which they couldn't have done with mta.nyc.ny.us because it was too complicated," LaPlante says. "Now they have a short, memorable name."

Some Web sites are retaining their original .com names as they purchase .info names. RedSheriff split its Web site so product and service information are on redsheriff.info, while other corporate information remains on redsheriff.com.

Other companies are purchasing generic sounding .info names. The New York State Attorney General's Office set up wtcrelief.info as a Web site to compile information about 190 organizations that are accepting charitable contributions to the World Trade Center relief effort.

Overall, domain name sales are falling as speculators who purchased .com names during the height of the Internet craze in late 1999 and early 2000 let their two-year registrations expire. Last fall, the number of .com domain names that were not renewed surpassed the number of new .com names registered for the first time ever. But domain name registrars say the prospects for the new top-level domains introduced last year — including .info, .biz and .name — remain strong. ■

Divine

continued from page 25

explodes. Companies that don't handle information well can suffer millions of dollars in losses, she says.

"So along comes divine and they offer information, plus content management, plus search," Feldman says. "Until now, for the most part, it has been necessary to buy a separate search engine, a separate content management piece and separate content. With divine, all the pieces are strung together and there is one contact point for your information systems."

That could be a key differentiator as the company gears up for some pretty stiff competition, experts say. In a company profile she wrote on divine in December, Patricia Seybold of Patricia Seybold Group said divine would compete with IBM, Hewlett-Packard and "all the exist-

ing professional services and systems integration firms," such as Accenture, PricewaterhouseCoopers and Electronic Data Systems. In content-related areas, it will be competing with companies such as Vignette, Interwoven and IBM/Lotus, she said.

Other analysts say they wonder how the company will integrate the myriad technologies it has brought on board. "I'm not real sanguine they're going to do it. At least not within the time frame they're talking about," says Robert Lerner, an analyst with Current Analysis. "But I may be proven wrong."

Hank Barnes, divine's general manager of content delivery and aggregation, says the company expects to integrate its products within the next year or so. He says most of the products are built on Java 2 Platform Enterprise Edition.

Divine: www.divine.com

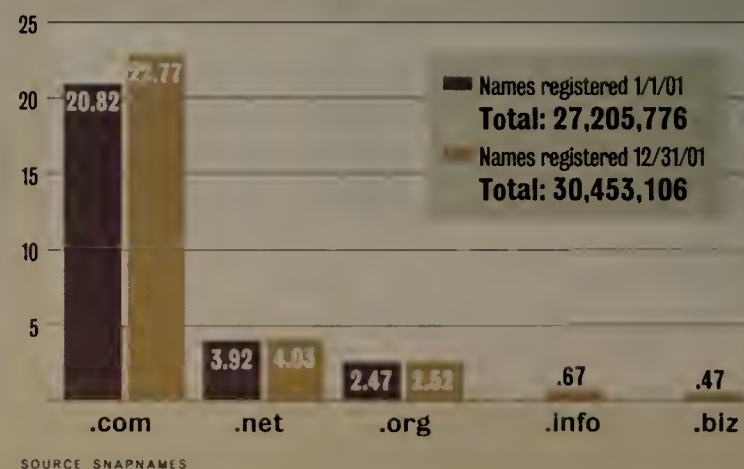


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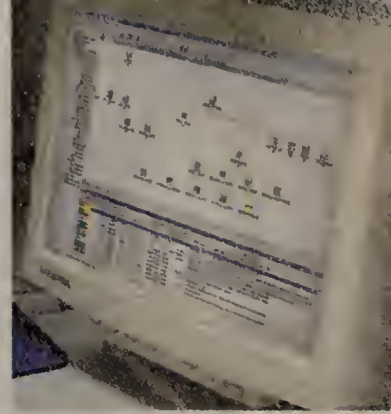
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'NET
INSIDERScott
Bradner

A technology travelogue

It is hard to think of column topics on a good week; it's especially hard if one is in the middle of a vacation. My wife and I are on an eight-day trip around southern California, driving all the way from Los Angeles to Monterey, then to the

Colorado River and back. During the last day, in between sightseeing stops, I've been wracking my brain trying to come up with some insightful topic when it suddenly hit me that many of the things we have been seeing remind me (in some distorted way)

of things going on in the world of technology and the Internet.

Today, we stopped in Lake Havasu City, Ariz., to see the London Bridge. Here is something that was a technological marvel when it was built, was then declared outdated by the people it was designed to serve and was finally transported with great care to be installed in a location where it serves no actual function. This seems to be the perfect logo for those people who want to "improve" the Internet by adding ATM flow control to IP.

We have spent most of our driving time, nearly 2,000 miles so far, on small, two-lane roads. We have been very lucky because, in

We stayed in Death Valley, which is an all-too-obvious symbol of the high-tech drought we are going through.

spite of driving "aggressively" relative to the speed limit, almost all of the time we were alone on the road. We only had to deal with a few of those special twits that, having decided how fast they want to go, somehow contort that into saying that it is how fast everyone should go and engage in whatever blocking necessary to be sure that this is the case. This type of person is genetically predisposed to drive recreational vehicles or serve on state utility commissions.

There is some neat stuff in this part of the country. We just went through Joshua Tree National Park, named after a tree that looks like Picasso's idea of what a tree thinks it should look like — an explosion of limbs going in all directions, sort of like Enron's multitude of divisions.

We stopped at the Hearst Castle, a monument to ego and veneer in that the core concrete skeleton is crude and unfinished and covered with a skin that makes it look impressive. We also went through Sequoia National Park with the amazingly large trees that, when they fall, are often hollow. As you might guess, both of the latter also reminded me of Enron.

We stayed in Death Valley, which is an all-too-obvious symbol of the high-tech drought we are going through. But it should be noted that Death Valley is not all that wide, just a few miles — you have to insist on traveling north to south to be in the valley for long. Let's hope that our path through that valley is the short one.

Disclaimer: Harvard rarely travels, so the above travelogue is my own.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

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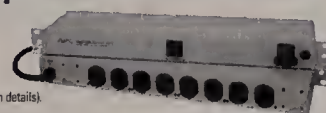
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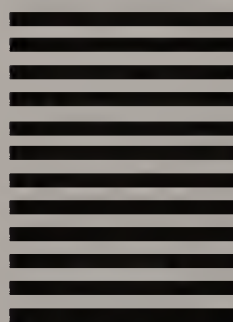
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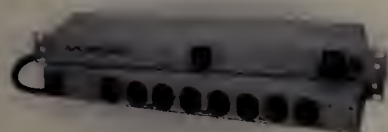
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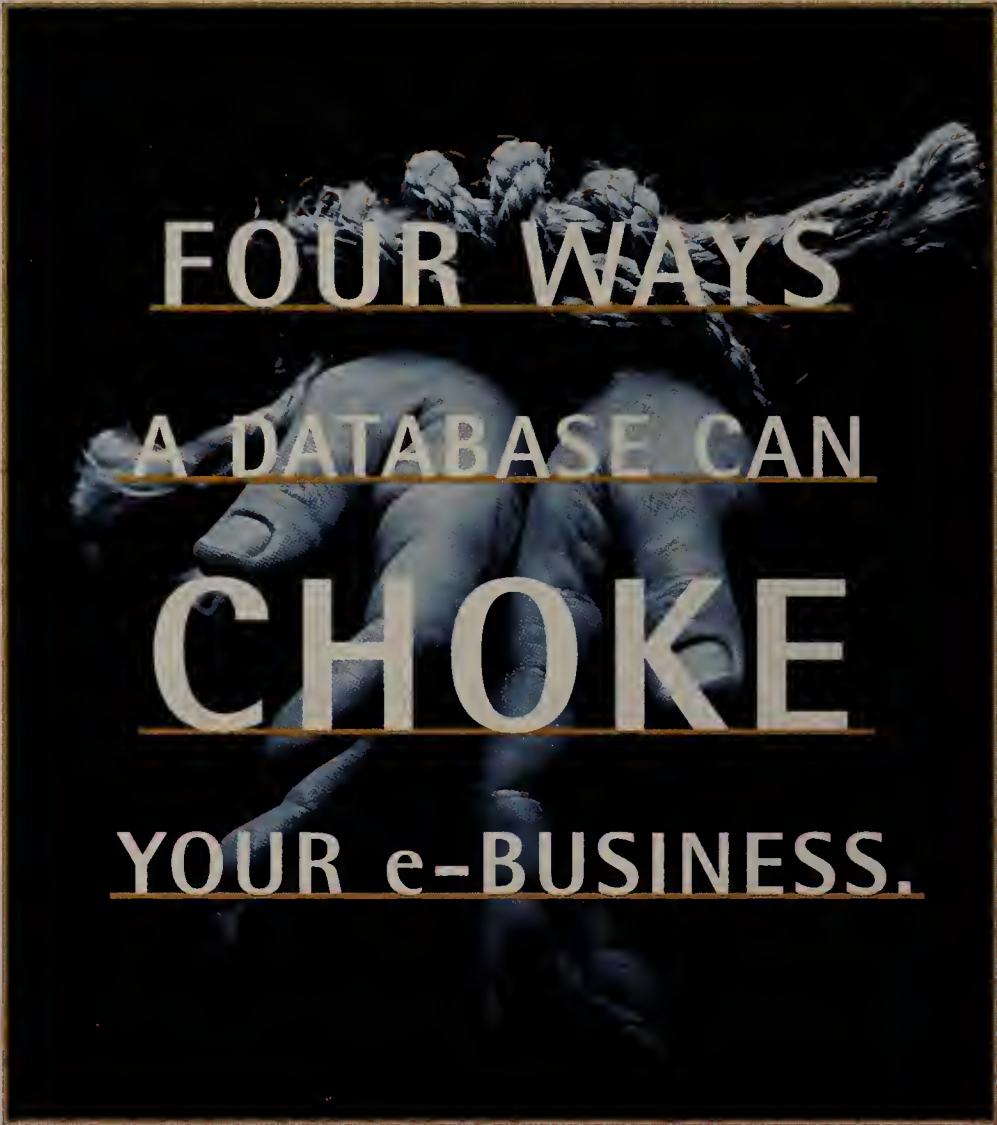
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ASPs look to bolster security offerings

■ BY JENNIFER MEARS

Security already was a stumbling block for application service providers intent on convincing companies to rely on remotely hosted applications. Now with security issues getting more attention because of proliferating viruses and increased feelings of vulnerability after Sept. 11, ASPs are renewing efforts to provide the best security services available.

Because it is an emerging market, there are not standards that dictate base security levels. Analysts suspect these standards will emerge, but meanwhile customers can expect ASPs to highlight security offerings.

Qwest Cyber Solutions (QCS) unveiled

enhanced security services last week. This release follows Corio's announcement in December 2001 that it was rolling out a new security framework for enterprise customers. Other ASPs say they intend to closely monitor security advances and make sure they provide the latest in services.

"Security is one of those living, breathing animals that changes every day, so we're always looking for ways to make our clients more secure and keep their data more secure," says John Kerr, director of information assurance at USInternetworking.

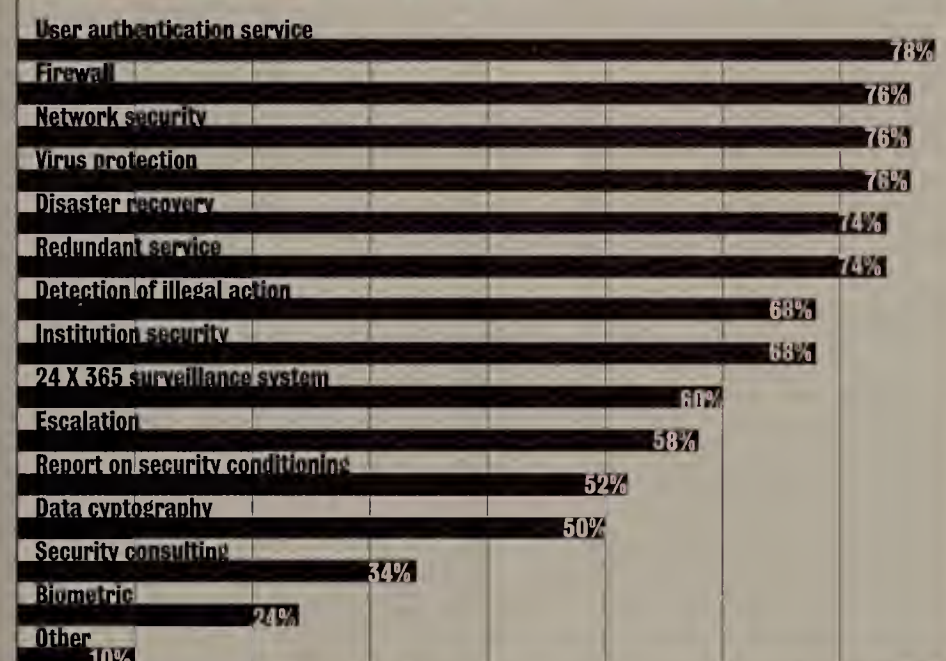
Across the board, ASPs serving large companies and delivering complex applications provide a standard fare of managed firewalls, intrusion detection, network security, user authentication and VPN services. Some, such as Corio, partner with managed service providers; others, such as USi, provide much of the security on their own.

Nevertheless, security remains one of the largest hurdles to organizations buying into ASPs. Many companies perceive that as a vulnerability even though analysts and customers agree ASPs often provide better security than a company could deploy on its own. Part of the reason for the apprehension is the complicated ASP model, which involves not only remotely hosting data, but also transferring that data across a

Locking things down

In the fall of last year, IDC interviewed 50 ASPs to find out what type of security services they offer. Here's what they had to say.

Please indicate which security services your company provides:



network to end users. Many ASP-hosted applications are integrated into enterprise systems, another doorway for possible network breaches.

Still, hundreds of companies are using ASPs and fueling a fast-growing market. Large companies with sensitive data, such

See Security, page 36

Short Takes

■ **Equant** is teaming with Packeteer to offer data customers its **Application Performance Analysis** service, monitoring tools that could be deployed at all a customer's network sites or areas where bandwidth usage is more critical. The service is limited to network usage and performance, but Equant says it plans to roll out specific application-monitoring support later this year. This feature will let users monitor how a customer resource management application performs across their network. Equant also offers network monitoring tools from **Visual Networks** and **Concord Communications**.

■ **Research in Motion**, which makes the BlackBerry handheld device, announced a deal last week with **AT&T Wireless Services** to offer a version of its device with e-mail and phone services on the carriers' high-speed data network in the U.S. AT&T Wireless will offer its corporate customers a model of the BlackBerry Wireless Handheld that lets users place a phone call using a plug-in earpiece and microphone. The service will be delivered over AT&T Wireless' GSM voice network using General Packet Radio Service technology.

Verizon Wireless gets closer to 3G

Other service providers not far behind, analysts say.

■ BY MICHAEL MARTIN

Verizon Wireless launched a high-speed wireless data service last week that is capable of supporting transfer rates of up to 144K bit/sec, about 10 times faster than wireless transfer rates on existing networks.

Called Express Network, the service is available in several large cities on the East and West coasts.

While Verizon may be the first carrier to market with a service supporting higher wireless data transfer rates in a broad market launch, other providers likely won't be far behind, says Eugene Signorini, an analyst with The Yankee Group.

"Sprint has plans to launch a high-speed service in Q2," he says. "There may be a bit

of a market advantage in getting very early adopters, but a lead time of a couple of months isn't going to make a big difference."

AT&T Wireless also has tested its 3G wireless services in select markets since last year. While Verizon and Sprint base their 3G networks on 1xrtt, which is based on Code Division Multiple Access technology, AT&T's wireless network will be based on the GSM communication standard that European carriers favor.

Currently, wireless networks support transfer rates of about 14K bit/sec, a far cry from the 144K bit/sec Verizon says its network can support. However, Verizon officials say users initially should expect to get average speeds between 40K bit/sec and 60K bit/sec.

Verizon bills the new wireless network as a 3G implementation, but at 144K bit/sec under ideal circumstances, Express Network is just a step on the path to true 3G, which should support speeds of 3M bit/sec to 5M bit/sec. U.S. carriers are not expected to achieve true 3G speeds until about 2004.

Verizon is promoting the Verizon Wireless 2235 Kyocera as its Express Network handset. The Kyocera unit supports a wireless application protocol browser and two-way text messaging. By also purchasing a Mobile Office Kit from Verizon, users can hook their laptops up to the 2235 handset and use the handset as a wireless modem.

The Sierra Wireless AirCard 555 is the

See Wireless, page 35

EYE ON THE CARRIERS

Lisa Pierce



2.5G service deployments gather momentum

being introduced now. The International Telecommunications Union requires that 3G services deliver 2M bit/sec to a mobile device while stationary. In contrast, the maximum bandwidth supported by 2.5G Code Division Multiple Access (CDMA)-based 1xrtt service to a stationary device is 153K bit/sec.

Similarly, GSM-based 2.5G Global Package Radio Service (GPRS) tops out at 115K bit/sec. But both the GSM and CDMA versions of these technologies also support upgrades and overlays to support bandwidths between 2.5G services and 3G services. Bandwidth for Enhanced Data for GSM Evolution and CDMA-based 3xrtt services top out about at 512K bit/sec.

However, users should have modest expectations regarding phase one 2.5G throughput because the bandwidth experienced with these services under real-life conditions is significantly lower than the maximum. Although 1xrtt devices can support the maximum speed, the experienced bandwidth while stationary is less than half — currently

averaging between 40K bit/sec and 64K bit/sec under real-life conditions. The peak speed of current generation GSM-based 2.5G devices is even less — about 25% of peak bandwidth. Relative bandwidth also degrades as the distance between a mobile device and transmitter increases. Application performance can be improved with the use of compression, but depending on the requirements of the application, may compensate only partially for the lack of higher bandwidth.

Various U.S. providers have different service introduction plans. Looking at those that currently have double-digit 2G market share, Verizon Wireless introduced its 1xrtt service last week and made it immediately available to about 20% of its network footprint.

Its plans are quite aggressive, as the company's CTO says he wants to have 1xrtt service deployed to 100% of its combined digital and analog footprint before the end of next year. Sprint PCS had intended to make 1xrtt service available to a limited number of serving

areas by the end of last year, but now says it will make it available to 100% of its base this summer. AT&T Wireless began introducing GPRS last July and has deployed it in 20 U.S. states to date. It has gone on record on many occasions that it intends to get 2.5G service deployed to 100% of its digital base by year-end. And Cingular is deploying GPRS in Puerto Rico, its initial market, right now.

When considering current 2.5G services and future enhancements, important issues include service availability, device throughput, security, application design and price. With their introduction by multiple providers, companies finally can begin to evaluate their applicability and value to their businesses.

Whatever they may be called by providers, these services are indeed a welcome arrival in the U.S.

Pierce is a research fellow at Giga Information Group. She can be reached at lpierce@gigaweb.com.

Wireless

continued from page 35

other method users can employ to connect to Express Network. The card fits into a standard PC card slot on a laptop or other computing device and acts as modem and mobile phone.

Verizon also unveiled a partnership with Accenture last week that will involve both companies selling integrated application and wireless offerings to businesses.

Accenture, formerly Anderson Consulting, will handle the integration of mobile enterprise applications, which could include customer relationship management software and inventory information with Verizon's Express Network.

Express Network is available in about 20% of Verizon Wireless' overall footprint. Verizon says it hopes to have most of its points of presence upgraded to support Express Network by year-end.

Verizon Wireless, which is jointly owned by Verizon and Vodafone, an international mobile telecom outfit in the U.K., has about 29 million customers.

Most potential 3G users likely will wait until they have a choice of providers before they decide to sign on for service, says Joe Laszlo, an analyst with Jupiter Media Metrix.

"Consumers and businesses will likely be skeptical about what a 3G service offers them

Bumping up wireless bandwidth

Features of Verizon's Express Network include:

- Speeds up to 144K bit/sec.
- Wireless enterprise application hosting in partnership with Accenture.
- Cost of \$30 per month in addition to the base \$35 cost of a digital calling plan.
- Uses a 2235 Kyocera handset, or AirCard 555 PC card.

and how much it costs until they see more than one option available," he says.

Customers wishing to subscribe to Express Network must pay \$35 for a basic Verizon Wireless digital calling plan and then an additional \$30 per month to use any of the basic calling plan minutes on Express Network.

Verizon officials say the company expects to introduce pricing plans in the future for enterprise customers based on kilobytes used.

The Sierra Wireless AirCard 555 retails for about \$300 and the Kyocera handset retails for about \$80, as does the Mobile Office Kit for the Kyocera handset.

Verizon Wireless: www.verizonwireless.com

Security

continued from page 35

as healthcare organizations and financial institutions, are finding the security they need with ASPs.

"On the security side, the general philosophy is that ASPs have more specialized resources for looking after security than I could afford to have internally," says Rodric O'Connor, vice president of technology at Putnam Lovell Securities in San Francisco.

But enterprise users should be careful to query ASPs about the security services they offer. ASPs that cater to large companies and deliver complex applications undoubtedly will provide baseline security services, such as managed firewalls, virus protection, intrusion detection and user authentication. But smaller, emerging players may not. A study by IDC last fall found that nearly a quarter of 50 ASPs surveyed failed to offer basic network security.

"They didn't offer virus protection. They didn't offer user-authentication securities," says Jessica Goepfert, an analyst at IDC. "These are things I consider vital and fundamental to any ASP offering. It's like renting a building that doesn't have locks on the doors."

Mark Clayman, director of hosting at Surebridge, says security is becoming increasingly important — second only to performance concerns — to customers, and the ASP is responding by providing more security services on a

customer-by-customer basis.

"Everything from physical security, to the operating system, to antivirus, to application layer security, to network security and intrusion detection. That's what we offer on a standard basis, but it's always evolving," he says. "You never know when a customer is going to come in and want some additional security layer or some added functionality. We're always tweaking our service."

QCS says flexibility is a key to its enhanced security services. QCS partnered with managed security service provider Veritext to offer services that range from intrusion detection to vulnerability scans to professional services.

What's interesting about the services, analysts say, is that they are offered in a tiered manner so companies can choose what level of service they need. Each service is integrated with the application delivery but is priced

in addition to the monthly application subscription.

"The idea of doing it in terms of an add-on makes sense because obviously for some applications and some customers it's not going to be worth spending additional money," says Laurie McCabe, vice president and service director at technology research firm Summit Strategies.

However, she predicts that over time the enhanced services will be rolled into standard offerings as the security bar is raised in response to customer demands. ASPs say customers already are pushing them to be clear about what type of security is provided.

"Customers are becoming more educated about security because so many people are doing business over the Internet," says Chip Gums, vice president of ASP Agilera's eastern region operations. "It's more of a topic during the sales cycle today than it was a year ago, and we are continuing to improve our security daily."

The bottom line, analysts say, is companies should consider what applications they want delivered from an ASP and then determine the level of security required. A calendar application won't need the same level of security that payroll software would, McCabe says.

"You want the best security that you can afford," she says. "Like everything else, it's going to boil down to trade-offs." ■



More online!

• QCS is partnering with managed security service provider Veritext to offer services.

• Choosing an ASP.

DocFinder: 7932



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Special Focus

VSAT: Satellite service gains attention as less-expensive broadband option.

VSAT services are finding new customers

■ BY DENISE PAPPALARDO

Very Small Aperture Terminal satellite services have been a staple among retail businesses for more than 15 years, but now the technology that once served only vertical markets is spreading its wings.

VSATs have long been attractive to organizations that needed to reach hundreds or thousands of locations with low-bandwidth data connectivity. Businesses in North America spent \$775 million on VSAT services in 2000, according to Comsys.

VSAT services are attracting new customers for two reasons: the dominance of IP and the abundance of bidirectional services. VSAT offerings for small businesses are a relatively new development and are also an affordable alternative.

"The VSAT market has changed so much," says Chris Baugh, principal analyst with Northern Sky Research. "Traditional VSATs were in gas stations and retail chains with only one-way support. IP is now the de-facto network standard, which has allowed a lot of satellite companies to reduce their costs and decrease the complexity of their networks."

While VSAT users have supported IP traffic over their networks for several years, it typically has been one of several protocols. IP-only VSAT services are relatively new.

IP the driving force

The move to IP has been the result of customer demand and the ability of service providers to lower costs, says Simon Bull, an analyst with Comsys. VSAT providers are seeing 90% of their new customers requesting IP support, Bull says. When a service provider standardizes on IP they can reduce their internal network infrastructure costs because they can buy equipment and software off the shelf.

"By supporting IP and standardizing certain parts of the technology, [service providers] can deploy two-way VSAT networks with [customer-premises equipment] that costs \$500 to \$600," Baugh says. He says this would be the floor of the market with users paying about \$70 to \$200 per month, per site for service for perhaps 128K bit/sec worth of bandwidth.

IP-only support lets service providers such as SpaceNet, a wholly owned subsidiary of Gilat Satellite Networks, offer bidirectional or two-way services to businesses with 250 or fewer sites. This service, called Connexstar, costs \$119 per month for 128K bit/sec upstream and 500K bit/sec downstream with a one-time equipment cost of \$1,000.

Hughes Network Services, the leading provider of VSAT services in North America (see graphic), offers small-business users Directway, a VSAT Internet access service. Starband and Tacyon also sell VSAT Internet access services to individual users. These offerings let a greater variety of businesses, such as real estate agencies and veterinarian offices, use VSAT services, Bull says.

In the past, most VSAT service providers were interested only in deployments that reached thousands of sites, but there has been a change of philosophy within the industry. While several VSAT services for single sites are available, not all providers are sold on the concept.

Traditional VSAT networks are built based on the amount of bandwidth a company needs and the num-

ber of sites that will share that bandwidth, says Mike Massey, an analyst with Pioneer Consulting. Selling individual Internet access over the same satellites to thousands of customers is presenting some problems.

"The downside is now you're trying to develop a service offering based on an anticipated profile of a given customer," Massey says. "You're not designing a whole network based on one company's usage patterns."

So while a company such as Hughes promotes that it has more than 100,000 customers using its DirectWay service, some users are dealing with frustrating bandwidth constraints, he says. Providers of these services are going through a lot of growing pains trying to figure out how to offer individual access, yet allocating enough bandwidth so users get high-quality service,

"Initially we were looking to reduce the amount of time credit card authorization took at our stores," Beckwith says. "We reduced that from 15 seconds down to 3 seconds."

Since replacing Bob Evan's dial-up network, Beckwith says he has added e-mail, has streamlined the company's inventory process by creating a browser-based invoice application, and will soon add human resource applications to his VSAT network.

Another recent development that's bringing VSATs into more businesses is that providers have struck deals with terrestrial carriers. Hughes signed a deal that lets users buy Hughes VSAT services through WorldCom. Baugh says users likely will see similar deals not only with terrestrial service providers, but also with hardware vendors.

VSATs are considered an add-on service rather than a full-fledged alternative to terrestrial networks, he says. VSATs are attractive for businesses that want to support specific content such as corporate training and e-learning to multiple locations, but don't want to add more bandwidth throughout their terrestrial networks to support such applications, Baugh says.

SLAs more common

Service-level agreements also are becoming more common as VSAT service providers realize enterprise requirements. Users should expect at least two service guarantees: one for throughput and one for uptime, Baugh says. Because harsh weather will impact satellite services, Baugh says users have to be prepared for some downtime. Realistically, most VSAT providers can guarantee 99.9% availability, but users should only put applications over a VSAT network that could tolerate eight to 10 hours per year of downtime.

While developments in VSAT technology will continue, the traditional VSAT network that's based on a star topology is still a solid choice for many business users, Massey says. "Depending on the type of network, a VSAT setup could be cheaper per location than a voice line in some cases," he says.

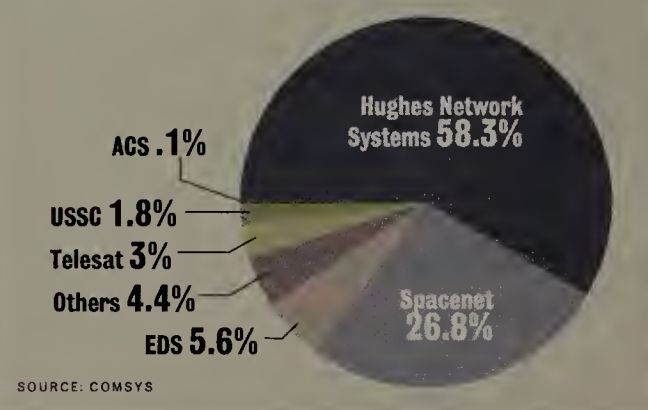
In the case of a chain of retail stores that use their VSAT networks for credit card authorizations, not much bandwidth is needed. A group of 500 stores could share a 128K bit/sec satellite channel and not experience any delays because of the small amount of traffic that's being sent over the network, even though it's regularly used.

A company with 4,000 locations might pay about \$60 per month, per VSAT site. Businesses with a few hundred sites probably will pay about \$100 per month, per site for the same amount of bandwidth.

"Trying to build an alternative ISDN network or a 56K bit/sec frame relay network is much more expensive," Massey says. ■

VSAT service provider market

A recent report shows that Hughes Network Systems and Spacenet provide the majority of VSAT services in North America based on the number of terminals shipped.



while keeping costs in check, he says.

While VSAT Internet access options open up broadband services to users in areas where DSL or cable modem services are not found easily, the industry is still working out kinks with this offering. However, analysts say it's just a matter of time before service providers fine-tune bandwidth allocations to make individual VSAT offerings a success.

The real benefit with these offerings is you can get VSAT anywhere, Bull says, unlike DSL and cable modem services. And the next high-speed network option for users would be a fractional T-1 line or a frame relay connection, both of which cost hundreds or even a thousand dollars per month more than a VSAT, DSL or cable modem service.

The geographical reach of VSAT technology was a prime reason why Bob Evans Farms deployed a 481-site network about 16 months ago. The national restaurant chain teamed with Spacenet to link its retail stores and corporate headquarters to an always-on IP VSAT service, says Larry Beckwith, vice president of IS in Columbus, Ohio. And the network was up and running in five weeks, he says.

While Beckwith looked into frame relay, DSL and ISDN service options, he chose a VSAT network because it was the only technology that could reach all locations and was the most cost-effective, he says.



More online!

Hughes Network Services predicts new satellite technology to deliver 30M-bit/sec download and 500K-bit/sec upload speeds by 2003.

DocFinder: 7934

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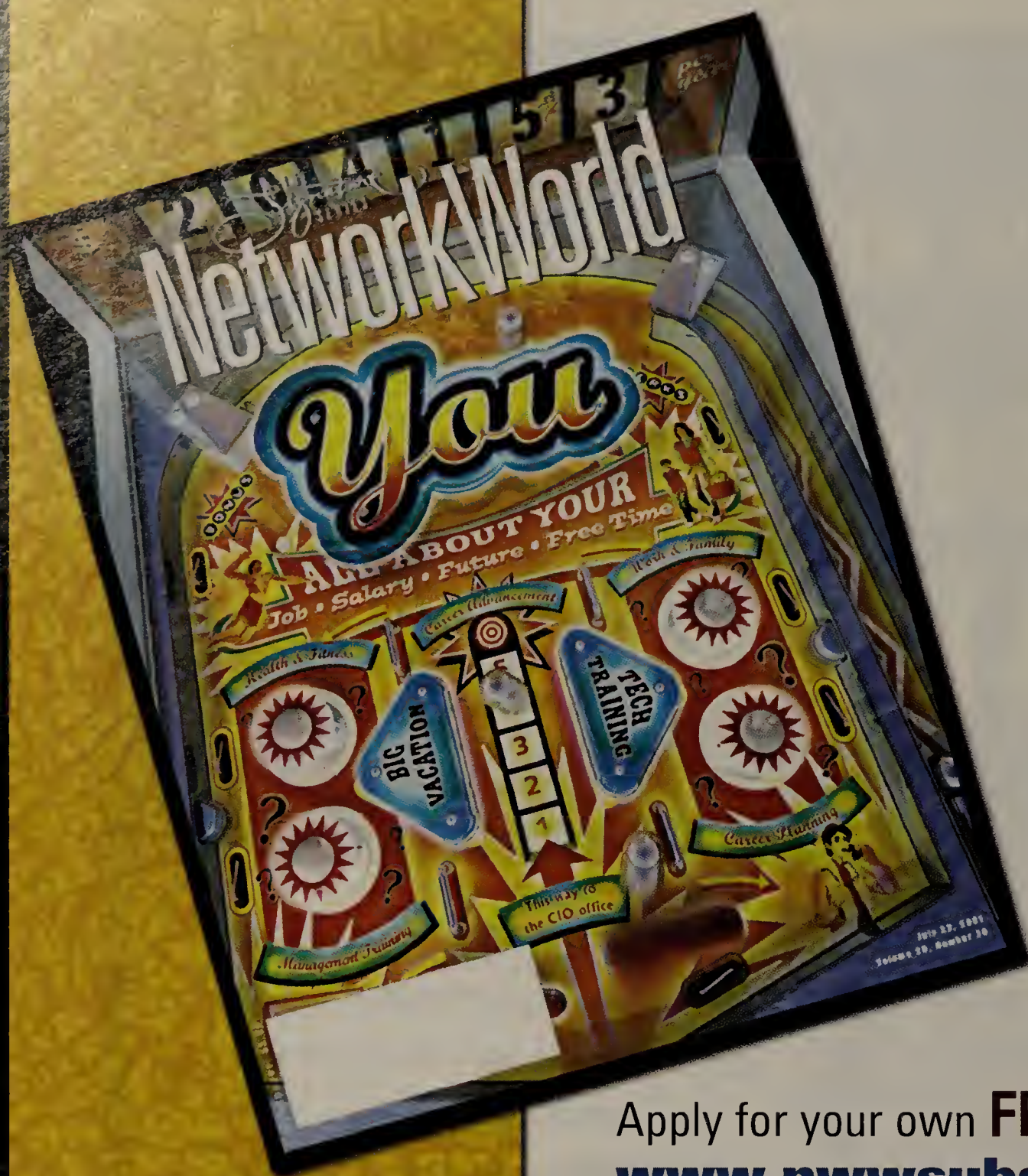


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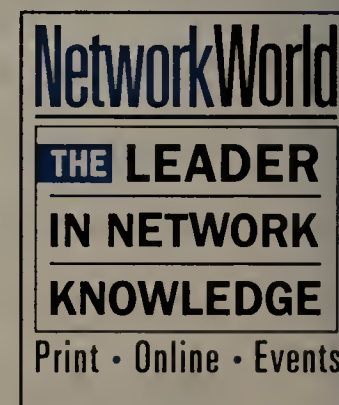
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The Edge

■ SERVICE PROVIDER DEVELOPMENTS
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Nortel expands metro Ethernet portfolio

New boxes, enhancements to OPTera 3500 designed to spur VPN service provisioning.

■ BY TERRI GIMPELSON

OTTAWA — Nortel last week updated its metropolitan Ethernet line with two devices and enhancements to an existing platform.

The new products are the OPTera Metro 1200 Ethernet Services Module (ESM) and the OPTera Metro 8000, which is designed

for provisioning Ethernet VPNs.

The 1200 sits at the metropolitan edge or customer premises and serves as an Ethernet aggregation device. It supports one or two Gigabit Ethernet uplinks to the service provider and 12 10/100M bit/sec Ethernet downlinks to the user.

Nortel says the box can isolate customer traffic securely to ensure data privacy, a feature that replaces a similar function provided by virtual LANs (VLAN). Nortel says the 1200 eliminates the need to configure dedicated VLANs and manage large numbers of VLAN tags by creating VPNs out of a single Multi-protocol Label Switching (MPLS) label-switched path (LSP). That's where the OPTera Metro 8000 and enhancements to the existing OPTera Metro 3500 come in. Both boxes establish this LSP at the central office for the 1200s.

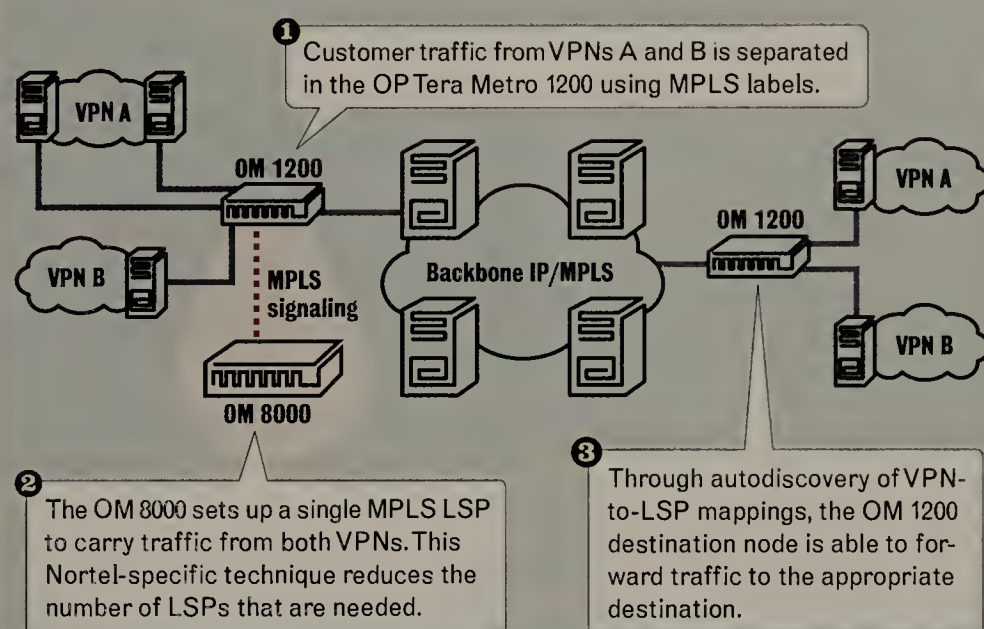
The 8000 is a Layer 2 MPLS metropolitan core switch designed for traffic engineering. It comes in three-, six- or 10-slot chassis that house four-port Gigabit Ethernet modules, with a future upgrade to eight ports.

MPLS features on the 8000 are based on the IETF's proposed Draft Martini standard, which specifies how VPNs can be set up at Layer 2. However, Nortel adds its own extensions to Draft Martini.

The company says that in a meshed MPLS VPN, Draft Martini requires the provisioning of all new LSPs with the

Nortel introduces MPLS VPN architecture

New gear combines multisite traffic onto a single path.



addition of just one new site. This presents scalability issues in that the number of LSPs grows exponentially as new VPN sites are added, Nortel says.

What Nortel proposes is a single LSP that is given specific VPN pathways at the customer premises. The company says it splits the provider edge into two

pieces, creating what it has deemed a "Logical Provider Edge" comprised of two boxes that provision LSPs for the MPLS VPN pathways created at the customer site.

The boxes perform MPLS label stacking to aggregate VPN pathways onto LSPs.

See Nortel, page 42

Nokia unveils dense IP/ATM DSLAM

D500 initiates migration from legacy service infrastructures.

■ BY JIM DUFFY

SANTA CLARA — Nokia is pitching a broadband access platform the company claims will let service providers begin the transition from their current multiple access networks to an IP infrastructure.

The Nokia D500 is a DSL access multiplexer (DSLAM) that lets service providers provisioning access services over ATM introduce IP-based voice and multimedia services. Such services will include video on demand; pay-per-view; interactive gaming; videoconferencing; real-time broadcast and interactive TV; and streaming audio.

However, these services are all "futures" to be rolled out on the D500 over an

indefinite time. At first, the D500 will support high-speed Internet access, voice over DSL, IP VPNs, LAN interconnection and video streaming.

The D500 also enables incumbent local exchange carriers (ILEC), regional Bell operating companies, and post, telegraph and telephone administrations to evolve existing network infrastructures to IP to support new services at a lower cost than with ATM, Nokia says.

The D500 features a 160G bit/sec backplane, or 4G bit/sec per slot of capacity. It supports asymmetric DSL, single-pair high-speed DSL and very-high bit rate DSL services.

It also supports OC-3, OC-12, 100Base-T Ethernet and Gigabit Ethernet interfaces,

in addition to IP routing and plain old telephone services.

The platform provides 912 DSL ports per shelf of density and up to 2,736 ports per seven-foot rack. This kind of density in a remote site application lets more than 250 users connected to a single cabinet or basement installation receive up to 6M bit/sec video channels per user, Nokia says. Other DSLAMs are half as dense, according to the company.

Analysts say Nokia is now the market leader in DSLAM density.

"The D500 platform has leapfrogged the competition and now offers the highest-density DSLAM on the market, paving the way for Nokia to penetrate the revenue-

See Nokia, page 42

Short Takes

■ **Lucent** last week announced it is shipping its next-generation optical transport system and switch, the **LambdaUnite MultiService Switch**. The product can connect cities, campuses and corporate networks to the long-haul public network, Lucent says. It combines a SONET/SDH optical transport system with switching capacity of up to 640G bit/sec and supports interfaces ranging from 155M bit/sec to 40G bit/sec. Lucent says two separate MSS systems can fit into a single rack, taking the place of multiplexers and cross-connect systems. Deutsche Telekom will start testing MSS this month. The company plans to use the box to support and deploy broadband services in its global network. www.lucent.com

■ ATM and frame relay switch start-up **WaveSmith Networks** has appointed two new executives. **Brian Fitzgerald** has been named executive vice president of worldwide sales, and **Tom Amato** has been named CFO. Fitzgerald was vice president of worldwide sales at Convergent Networks, responsible for building the company's sales force and securing its first customers. Fitzgerald also held positions at Lucent, Agile Networks and Racal Data Group. Amato was vice president and CFO for Intel's Dialogic division. He also held executive positions at Symbol Technologies, Amcast Industrial and Rockwell International. www.wavesmithnetworks.com

Metro is Cisco's core IP market now

Company dismisses 'hype' on next-generation backbones, says edge is where the money is.

■ BY JIM DUFFY

SAN JOSE — While the industry anticipates Juniper Networks' next-generation core platform, Cisco says the Internet router market is elsewhere at the moment.

The company is focusing on the metropolitan edge, where it sees an immediate customer need and the shortest-term opportunity for Cisco. All the talk about 40G bit/sec/slot capacity and multi-chassis scale into terabit performance — supposed features of Juniper's upcoming core platform — is just hype to Cisco.

"In 2000 and 2001, there was a lot of focus on 10G bit/sec backbones," says Robert Redford, vice president of marketing in Cisco's Internet Routing group. "Now the shift is more to the edge and metro, and turning new revenue services on."

Redford dodges questions about Cisco's plans for next-generation IP cores — as in, what's the scoop on 40G bit/sec and terabit scale from Cisco?

"Traffic has slowed," Redford says. "The next big router is not as much of an issue anymore."

With regard to 40G bit/sec/slot capabilities, Redford says it's less expensive for 10G bit/sec customers to just buy a couple of OC-192s than 30 more gigabits.

Riding the metro

The 10720 router is Cisco's key metro IP platform for:

- Provisioning Ethernet services to multitenant units.
- Constructing Dynamic Packet Transport rings around cities.
- Demonstrating resiliency of IP services.
- Enabling multicast services.



Does this mean Cisco will unveil dual-port OC-192s for the 12000 Internet Router line?

"There's always a desire for more capacity and incremental innovation for that to happen," Redford says. "You'll see higher and higher density per slot, but power and heat are [limiting] issues."

And what happened to the terabit scalability story Cisco was eager to tell two years ago when it unveiled the 12016 router? At that

time, Cisco said the 12016 could achieve more than 5T bit/sec of capacity by connecting multiple chassis to a separate 256x256 switching matrix (www.nwfusion.com, DocFinder: 7929).

Since then, Cisco's been conspicuously silent on terabit scalability while rumors have swirled that the company has had to rework its terabit plans more than once. Then again, the market for terabit-scale routers hasn't exactly scorched the earth.

"There's been absolutely no traction in terabit," Redford says. "Purchase behavior has been different from the hype."

As a result, Cisco's terabit plans are still evolving, Redford says. He says Cisco's made some single-chassis switch fabric scalability enhancements — most recently with the 320G bit/sec fabric for the 12016.

"We'll put it in the chassis first and go to multiple chassis to scale if we have to," Redford says.

But external switching fabrics to interconnect multiple chassis are costly because they consume ports, slots and rack space, he says. And as demand for terabit scale has lagged, Cisco found time to revisit its strategy.

"Are we committed to external fabrics? Yes," Redford says. "Do we

need to get there this year? No."

This year, carriers are demanding 10G bit/sec capabilities in smaller form factors for the metropolitan area and edge, Redford says. They're also looking for a six-month return on investment, he says.

"The bulk of the market will be in the middle of the market [between edge and core], which is not as sexy," Redford adds.

Cisco demonstrated the ability for service providers to provision Ethernet to multitenant units using its four-slot, 80G bit/sec 12404 router, 10720 router and Catalyst 2900 XL switches. The 10720, announced in October, is Cisco's first "purpose built" IP router for the metropolitan market.

The 10720 is a 2U-high (3.5 inches) device that features 24 10/100M bit/sec Ethernet ports and a 2.5G bit/sec uplink to a dual counter-rotating ring. The 10720 aggregates subscriber Ethernets from the 2900 XL switches and connects them to a Cisco Dynamic Packet Transport (DPT) metropolitan fiber ring.

DPT is designed to optimize transport of packet data and Ethernet over a TDM infrastructure such as SONET, with the same 50 msec resiliency as SONET. DPT is also a prestandard version of IEEE 802.17 Resilient Packet Ring, which is 15 months from completion.

DPT uses Cisco's Spatial Reuse Protocol to improve bandwidth utilization on the ring. Spatial

Reuse Protocol enables use of both the active and the protect parts of a SONET ring, and performs IP packet-level multiplexing to use all available bandwidth. This effectively provides 5G bit/sec throughput on a 2.5G bit/sec OC-48 ring, Cisco says.

DPT also uses SONET framing, which lets service providers run OC-12 DPT channels on an OC-48 SONET ring, Cisco says.

Cisco has sold 14,500 OC-12 and OC-48 DPT ports to 190 customers. OC-192 DPT is a planned enhancement.

Analysts see the 10720 as more of a strategic platform for Cisco rather than a tactical generator of quick revenue. Current Analysis says 10720 sales will be few, limited to a smattering of Tier 3 IP-centric service providers.

But it's strategically important in that Cisco needs to demonstrate that its core competence — IP — is resilient enough for carrier-class service provisioning.

"The 10720 is a sign of Cisco's future direction," Current Analysis said in a recent report. "Cisco needs to drive the market toward as many IP-based solutions as possible. The money for Cisco's customers will increasingly come from differentiated services requiring high capacity. Cisco needs to address the resiliency and differentiated characteristics of future carrier service revenue opportunities with its IP portfolio better if the company is to maximize its addressable market for the future." ■

Nortel

continued from page 41

VPN pathway-to-LSP assignment is handled via the MPLS label-distribution protocol.

This technique eliminates the need to provision an exponentially growing number of links in a virtual-mesh VPN with a single link between the provider edge and the provider core, Nortel says. Nortel has proposed this method to the IETF.

Nortel's technique is an important industry option, says Marian Stasney, senior analyst at The Yankee Group. But, "I caution them to keep everything standards-based," she says.

Another enhancement to the OPTera 3500 is the addition of an Ethernet user-to-network interface to support provisioning to end points configured with the OPTera 1200. The com-

pany also enhanced its Pre-side Ethernet Provisioning software to provide automated provisioning of end-to-end services.

In addition to the 1200, Nortel says the 3500 and the 8000 can be used at the customer premises edge, depending on the size and location of the network. Stasney says the different architectures of the individual boxes may preclude line card compatibility and sparing, however.

The 1200 will be available in March for \$25,000 to \$30,000, depending on the types of interfaces. The 8000 will sell for \$300,000 fully populated, or around \$6,000 per port. It will be available in the second quarter.

The enhanced version of Pre-side Ethernet Provisioning will be available in June.

Nortel: www.nortelnetworks.com

Nokia

continued from page 41

rich RBOC/ILEC/PTT accounts and become a top DSLAM vendor with double-digit market share," Eric Keith, an analyst at Current Analysis, said in a recent report. "The market-leading DSL subscriber port density/scalability of the D500 platform — as well as its ATM-to-IP migration proposition — is quite compelling and poses a direct, serious threat to the established DSLAM market leaders."

Keith notes caveats, however. Nokia will contend with Tier 1 DSLAM equipment vendors Alcatel, Lucent, Cisco, and Siemens, all of which can assert more comprehensive product portfolios than Nokia.

Also, the D500 does not support frame relay service delivery which lim-

its its market penetration potential.

"Many service providers — such as those serving the banking industry — utilize frame relay to deliver secure 'IP services' that are transparent to the end user," Keith says.

The D500 supports the IP Group Multicast Protocol for multicast services, which are key for IP-based video and TV applications. It also supports virtual LAN configurations, DiffServ, the Resource Reservation Protocol and Multi-protocol Label Switching for IP quality of service, and dynamic bandwidth allocation and control for bandwidth-on-demand applications such as video.

The D500 will be available in the second quarter. Pricing was not disclosed.

Nokia: www.nokia.com



More online!

Nokia acquires Amber Networks and its technology for developing fault-tolerant edge routers.

DocFinder: 7925

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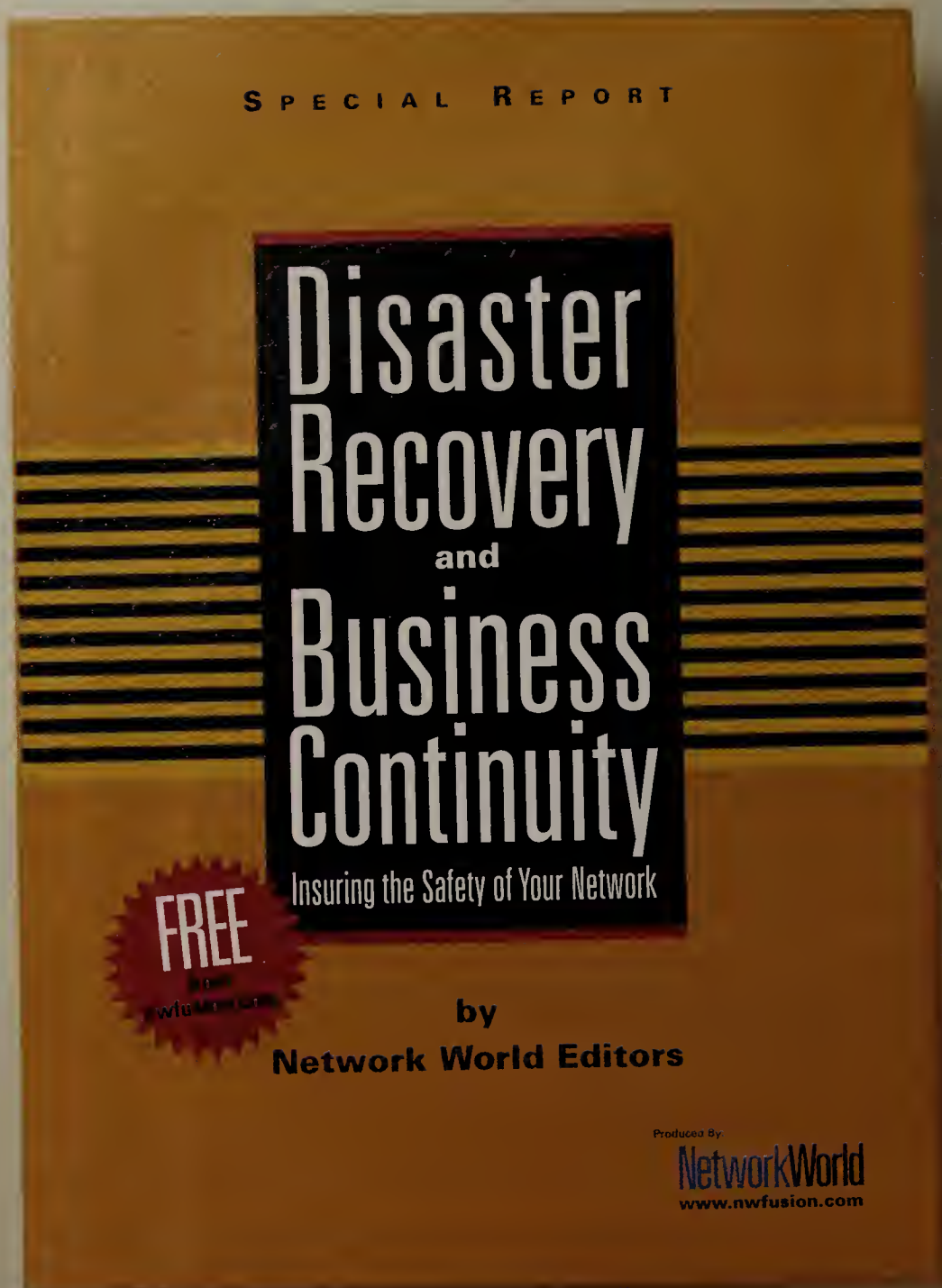
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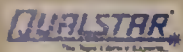
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Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

Syndication enhances Web services

■ BY EILON RESHEF

Web services has emerged as a general term that refers to offering applications to many business partners and integrating these applications into their Web sites quickly and seamlessly. Application syndication is a central technology for accomplishing this goal.

Application syndication lets companies package any Web application — complete with all its features — and effectively integrate it into multiple partner Web sites. Just as production studios syndicate TV programs to broadcast networks and local stations, online application syndication is the reuse of assets in multiple contexts to generate more revenue.

Interactive Web services simplify

Application syndication lets application providers package any Web application as an interactive Web service. To package an application for syndication, the application provider places auxiliary HTML attributes in its Web application pages to identify the parts of the pages that are to be shared.

Then, the provider exposes the Web service to its partners. The provider can publish the service in a public registry, such as the Universal Description Discovery and Integration or private directory, or deliver it directly to business partners.

To incorporate interactive Web services, business partners don't need to install any new software. They create HTML container pages and insert an HTML line in the page location where

the Web service is to appear. When the end user accesses the business partner's site, the Web service is integrated — in real time — from the live provider site.

The central element of this technology is the syndication server. The syndication server is located at the application provider facility and serves the request for the interactive Web service.

First, end users reach the partner site and receive the container page via HTTP. The client browser issues an HTTP

request to the syndication server, requesting the Web service. The syndication server issues a request to the provider application for an HTML page. Using the auxiliary tags to identify the Web service within the provider application, the server processes the page and returns it to the client. As users interact with the application, they remain in the partner site and dynamically receive new pages from the provider Web service.

During syndication, the server processes the HTML pages to fit the container environment, transparently handling such issues as presentation, navigation, interaction and personalization. It also facilitates click-stream reporting by both parties, and can help the applications share data at the points that require functional integration.

Syndication helps companies drive e-business growth

Several benefits flow from this syndication model. First, it supplies a systematic architecture for sharing complete applications with partners, letting businesses leverage their existing technology investments.

Second, the model is easy to implement and integrate into partner sites. Partners are not required to redevelop or reengineer the user interface — an effort that can easily become a barrier to establishing an online business relationship.

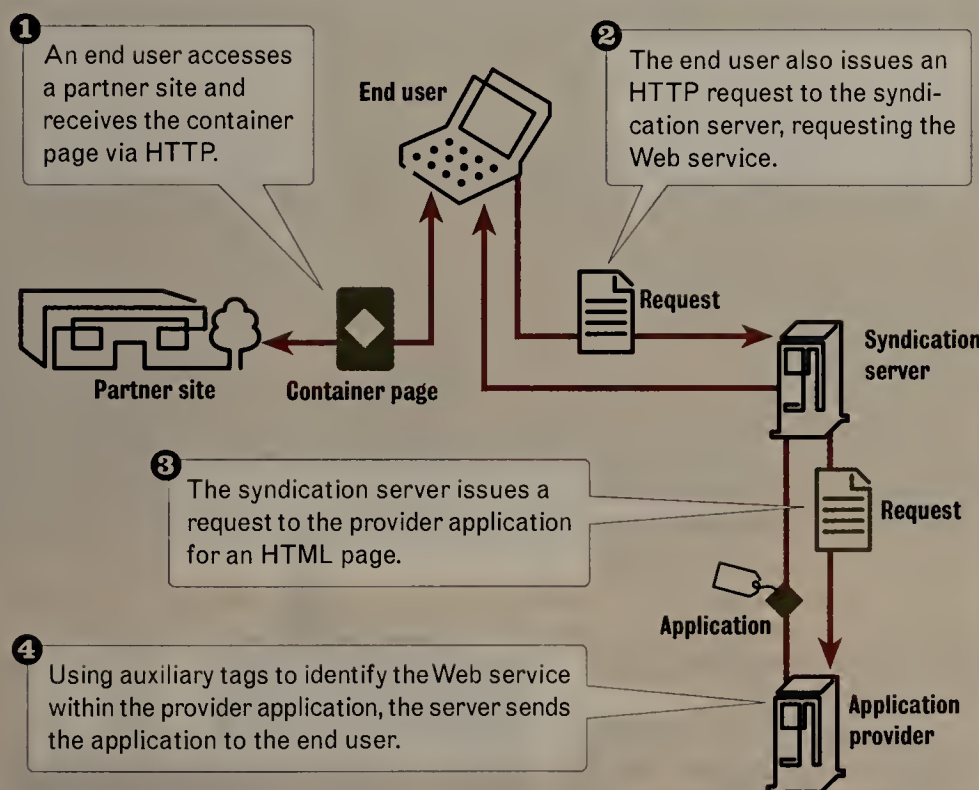
Application syndication and interactive Web services are becoming a standard for encapsulating business logic and sharing it with business partners.

They let businesses leverage their existing technology investments and equip business partners with proven applications and tools. They offer an innovative model that brings businesses significantly closer to fully realizing the full potential of the Web and keeping pace with the Internet's evolution.

Reshef is vice president of products for WebCollage. He can be reached at elon.reshef@webcollage.com.

Syndication server

A syndication server provides Web services to multiple online partners.



Ask Dr. Internet

By Steve Blass

We recently changed our network from a standard workgroup with a server to a Windows 2000 domain, making the server a primary domain controller. The clients need to use a modem attached to the server to dial out to a partner network. The modem sharing broke during the upgrade. On each workstation we added new accounts for the local user to log on to the domain. When local users log on to the domain and use the client software for modem sharing and tests for the modem, it works.

But when they actually try to use it, the system fails. It never works the first time, but it might work after three or four attempts, but only if the domain user has administrative rights on the workstation. Otherwise, it says it can't find the modem. If we log off and back on as a local user account, everything works again. How can we make it work for domain users?

Add a new "dial-up to private network" connection

through the "network and dial-up connections" menu in the server's control panel. Select "for all users" when prompted to specify who can use the connection. Domain clients then should be able to use the connection. You also may need to reinstall the application that's breaking from the server.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE

Mark
Gibbs



SVG update

that should gladden the hearts of all who would prefer to see ubiquitous Flash Web presentations disappear without a trace. (Frankly, we don't see the problem with Flash. If you are one of these naysayers, please enlighten us.) Hmm, interesting thought: If SVG really becomes dominant, could we see Macromedia dumping its proprietary Flash in favor of the open-standard SVG?

Something we have noted about SVG is that cartographers in particular seem to be getting very interested in SVG as a standard for mapping (DocFinder:8031). And check out a fantastic example at the same DocFinder number (be patient, it is slow but worth it).

Anyway, in the last of those Gearhead columns we mentioned an SVG editor from Jasc Software (www.jasc.com) called WebDraw that, at that time, was in prerelease beta. It is now in full release and worth a serious look.

While there are a few other well-developed SVG editors out there, WebDraw is one of the easiest to use. Installation is trivial, and the user interface very straightforward. There are panels for creating and modifying the image, inspecting the resultant Document Object Model and properties, and editing the document's timeline that controls the sequence and timing of

events that create animation.

The graphics-editing facilities are pretty good, offering the usual tools for drawing. There are also effects such as bevels and various color fills.

We must note once again, as in so many applications, the tool tip help — those text bubbles that pop up when the mouse hovers over a toolbar icon — doesn't always appear. This is very annoying, and as we

GEARHEAD RATING



Jasc Software
WebDraw

1=awful,
10=insanely great

have seen it so often, we're starting to think it may be Microsoft's problem rather than one belonging to application developers — anyone care to comment?

Anyway, within WebDraw you can open or import SVG files (including compressed SVG images — that's the .svgz or .svg.gz types) and import PNG and JPEG images. For output, you are limited to uncompressed and compressed SVG formats.

Once you have arranged all the compo-

nents of your image, you can add animation. You can also create keyframes on a timeline where one or more attributes are to change. Simply select the point on the timeline when something is to happen and select the objects that the something is to happen to (for example, change color) and apply the modification.

WebDraw lets you examine, edit and extend the underlying SVG coding. You can also preview your creation in a window in WebDraw or launch a browser to check out your handiwork.

If you are exploring what you could do with your Web site, check out SVG. At \$130, WebDraw shouldn't break the bank. WebDraw is still evolving and is hereby awarded eight gearteeth out of 10.

Now, as you start to work with SVG images, you will need to convert raster images to SVG. There are a few tools out there that attempt to do this tricky task. There are "fds for SVG" from PADL Lab, University of Tsukuba (DocFinder: 8032) and CR2V from Christophe Vantighem. This tool seems to give generally terrific results, but at present there seems to be a problem with the downloaded ZIP file being corrupted (DocFinder:8033).

What do you think of SVG? Graphic descriptions to gearhead@gibbs.com.



Cool Tools

Quick
takes
on high
tech
toys

KEITH SHAW

Lord of the Things

The Treos are coming! The Treos are coming!

If you thought it was bad when end users started showing up at work with their Palm PDAs and Pocket PCs, get ready for the next attack wave — Handspring's Treo Communicator.

Treo launches the next wave in the world of combination phone/PDA devices. The first generation of devices (Kyocera Wireless' Smartphone and Samsung's 1300 phone) showed you could combine a Palm-based PDA with a cell phone into one device. These devices, like the first iteration of all new things, were larger and bulkier than a lot of people desired. Early adopters will try anything new, of course, but these devices weren't getting end users to trade in their small, portable and comfortable cell phones.

Treo may change that.

Treo is small enough to be considered a cell phone yet large enough to be an effective and serious PDA. The inclusion of a thumb-style keyboard (on Treo 180)

eliminates the awkward text input that you find on cell phones (Treo 180g includes the more familiar Graffiti interface for Palm-heads). The first two Treo models will be available this month online, and in March in stores, followed by direct sales from carrier locations. Treo 180 costs \$400 with wireless activation, and \$550 without activation. Later this year, a color-screen version of Treo will launch, and cost \$550 with activation and \$750 without.

Handspring tried to enter the converged world with its VisorPhone, as a Springboard attachment that connected to its Visor models. However, Handspring failed, mostly because it felt like you were using your PDA as a phone. The bulkiness of the PDA didn't help either.

This time, Handspring takes the right approach by making it a phone first and foremost, and making the PDA functions secondary. First, Treo is smaller than the Kyocera and Samsung Palm phones, small enough to fit into a jacket pocket (like a cell phone). Second, the software on the device does a better job of integrating PDA capabilities into the phone. Searching for a phone number and dialing it is much easier on a Treo. (For a review of the end-user experience with Treo, go to www.nwfusion.com, DocFinder: 7933.)

Treo is a dual-mode GSM phone, which means end users also will get some data capabilities. This is the area where most network executives will receive phone calls from end users, as they will need help setting up the phone to access the Internet and e-mail.

For Internet surfing, Treo comes with the Blazer browser, which

does a good job of imitating the wired Internet experience. But remember, on the GSM network you're only getting 14.4K bit/sec connectivity, so the speeds aren't there yet. With Global Package Radio Service coming soon, the data transmissions will get faster, so there's hope.

Likewise, on e-mail the bundled One-Touch mail application only works with Post Office Protocol 3 e-mail, so getting end users connected to their corporate e-mail isn't an option right now. However, Handspring says a corporate e-mail option will come later this year.

Still, if your company plans on rolling out applications to Palm users (whether wireless or not), Treo will support these applications because it runs on Palm OS. And you'll still have to worry about encryption and security via third-party VPN applications, so the data they send is safe, but you were planning on doing that with your Palm applications anyway, right?

For the most part, though, your end users likely will fall in love with the cell phone features of Treo. Getting users to take advantage of the data capabilities with corporate data will still be up to you.



Handspring's Treo is small enough to let users trade in their cell phones.

Send any Cool Tools info to kshaw@nuw.com.

Get ready for the Treo invasion

WebSphere software



IBM

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EDITORIAL

John Dix

NetCountant lets you pay as you go

If you were looking for signs of economic and industry recovery at last week's ComNet show in Washington, D.C., you would have been sorely disappointed. While the Network World Showdown on VPN services — hosted by Editorial Director John Gallant — drew more than 400 people, the show was otherwise eerily quiet.

Attendance was way down, and the exhibit floor was pockmarked by empty booths. However, I did catch up with one company whose product, while not inexpensive, might help large companies save money in these troubled times.

Apogee Networks' NetCountant is a charge-back system that companies can use to bill departments for bandwidth, applications (including e-mail) and even storage. Rather than trying to centrally throttle use of these costly resources, the idea is to encourage the consumers of the resources to police themselves by requiring them to pay for what they use.

Apogee was founded in 1997 by Pablo Tapia, who is said to have built and managed global networks for the likes of Goldman Sachs and Bankers Trust. Tapia figured out he could use existing network probes to collect information about network usage and then boil that down to show where the network dollar was going.

This so-called cost transparency lets companies regulate usage of network resources just as they would travel and entertainment expenses, says Andrew Burroughs, chief marketing officer and general manager at Apogee.

And apparently it works. After using NetCountant to shift to a usage-based approach to internal network billing, Fidelity Investments is said to have reduced WAN traffic by 17%, resulting in \$15 million in savings in one year. While that couldn't be verified by press time, Burroughs says the return on investment is typically seven to eight months, which is amazing since NetCountant systems typically costs between \$2 to \$4 million.

Burroughs says installing NetCountant usually requires deployment of more probes to canvas the network and some customization to ensure the system can properly read probe log data. Other than that, the hardest part of implementation is deciding whom to charge for what and how much. "The software is easy to implement," he says. "The policy is harder."

The company has 14 customers today, including State Street Bank and Texaco, and is targeting outfits that spend \$10 million or more on bandwidth.

Gartner says 25% of the Fortune 1000 will have usage-based billing by 2004. If that proves true, Apogee is nicely positioned to capitalize on this trend.

— John Dix
Editor in chief
jdix@nww.com

Happy activation

I agree with Mark Gibbs' opinion of Microsoft's product activation system (www.nwfusion.com, DocFinder: 7923). Gibbs and I may be somewhat paranoid, but I'm afraid the reality will be worse than our worst predictions. Saying the activation control in Windows XP will affect only users of pirated software is like saying the new privacy-limiting "antiterrorist" measures will only affect people who have something to hide.

Already the process to modify some of the settings in XP is more cumbersome than it is for any other Windows product. You have to provide the product key each time you need to install a feature that was not installed in the original session (for example, to add a new protocol). This is time-consuming and annoying when one is dealing with a single machine or a very small network. I can only imagine how much fun it will be to do any upgrades or modifications to an enterprise-size network.

As Gibbs says, there will be no savings from the activation control. The only hope is that there will be more people who don't like the new arrangement and almighty Microsoft revises its strategy.

Marek Dziedzic
Partner
inMark Consulting
Kanata, Ontario

To-do list

Regarding "This year I'm definitely going to ..." (www.nwfusion.com, DocFinder: 7922): I pity the University of South Florida, whose IT group is marketing its services outside the university. I'm an IT

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

opinions!

consultant, and every time I see an IT group chase external clients, it ends in disaster for the business — external clients take priority over internal clients as IT chases "real money" rather than internal money. The outcome is generally poorer service internally or a misdirection of resources, with external clients subsidized at the expense of internal clients.

Greg Priestley
Director
asicIT Pty Limited
Sydney, Australia

In reading your "to do" items for 2002, I was aghast that Gartner analyst Bill Gassman recommends eliminating inventory applications as a cost-cutting tip and advice for better budget-management. This is not only counterintuitive during times of tightening IT budgets, when controlling and tracking IT assets is critical to knowing where to cut and how to identify software overspending, but also seems to run counter to Gartner's long-standing advice that IT asset management is the key to reducing cost of ownership and minimizing risk.

In a time when the Business Software Alliance is fining companies thousands of dollars and Microsoft is bullying clients into expensive new software licensing schemes, IT managers should dust off their inventory software, not throw it out.

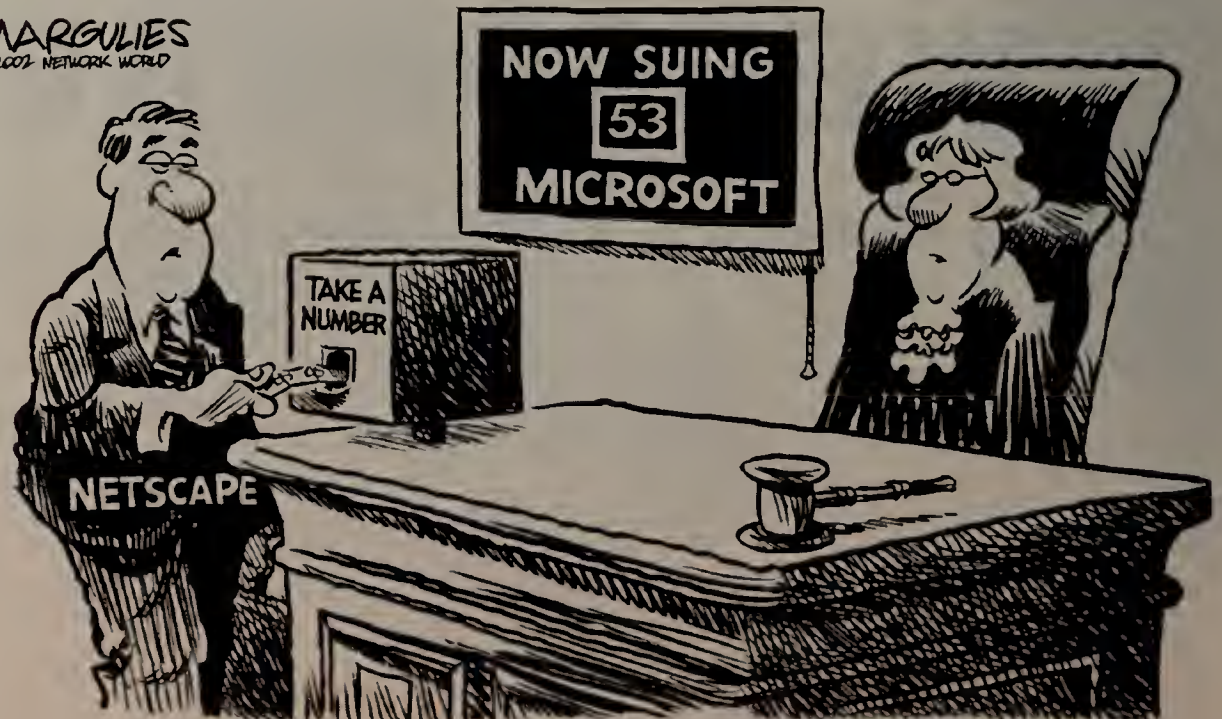
Karen Kaliski
Senior research analyst
Tally Systems
Hanover, N.H.

Editor's note: Gassman suggests that companies take a census of their network and system management tools and weed out those that they are not using, but for which they are paying maintenance and support fees. He does not suggest arbitrarily eliminating applications.



More online! www.nwfusion.com Find out what readers are saying about these and other topics. **DocFinder: 7921**

MARGULIES
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TOTALLY UNPLUGGED

Ira Brodsky

Is there anything we can do to pull ourselves out of this telecom depression? Yes, if vendors and companies focus on solutions offering short-term payback and long-term strategic value.

I suggest the industry redouble its efforts in two key areas: storage networks and 3G wireless. These are two of the hottest growth segments. Together, they promise to put information to more effective use in crucial customer service, business planning and workflow automation applications.

Storage networks let organizations create vast information repositories, which can be used to capture data about products, customers and markets. Putting a company's information in one virtual storage bin makes it easier to share, manipulate and distribute. Consider the typical hospital, where too often information is gathered and stored separately by the clinical, diagnostic, pharmaceutical and business departments. Bringing information together improves efficiency, reduces errors and saves money.

Storage networks also will play a role in the Internet's evolution into a global, digital-content library and on-demand delivery system. The key to making this happen is storage management software. Virtualization software is used to allocate storage space dynamically and efficiently, and to file and cache data.

Vast information repositories will come into their own once they are integrated with high-speed wireless communications. This is because

A cure for telecom depression

the value of information is directly related to its freshness, availability and context. Wireless is the only technology that can ensure real-time connectivity wherever information is collected or applied.

Reports that 3G wireless has been delayed are simply not true. There are already 3 million 3G users in South Korea, and 3G networks will come online this year in Japan, the U.S., Brazil and several other countries. These networks offer data throughputs starting at 144K bit/sec with planned evolution to speeds in the million bit/sec range.

There are about 800 million mobile phone users globally, and more than 90% of them already use digital service. With the migration to 3G services, the mobile phone industry will accomplish what local telephone companies promised 30 years ago but never delivered: ubiquitous and affordable high-speed data services.

The combination of 3G wireless and storage networks will enable new applications for database access and digital content sharing. The first crop of applications will deal mainly with field force automation, location-based services and customer/supplier relationship management. Each of these areas is ripe for development, because each addresses real needs.

There is no magic cure for telecom depression. But storage networks and 3G wireless can help us work smarter, and that is the only path to the next round of growth.

Brodsky is president of Datacomm Research in Chesterfield, Mo. He can be reached at ibrodsky@datacommresearch.com.

Storage networks and 3G wireless can help us work smarter, and that is the only path to the next round of growth.



REALITY CHECK

Thomas Nolle

By now everyone's familiar with the story of Enron's rise and fall. Here's a company that reportedly hid liabilities, hyped its business to analysts and tried to influence politicians. Sound shameful? It also sounds a lot like our industry.

Let's start with hiding liabilities. Generally accepted accounting practices (GAAP) have hamstrung some high-tech high-fliers looking to state the kind of positive results that attract interest from Wall Street. As a result, there's been pressure to adopt a different kind of accounting policy in reporting results: the pro forma approach, which lets the company hide a lot of one-time charges and liabilities — like Enron is accused of doing.

But it gets worse, my friends. On Jan. 15, *The Wall Street Journal* reported that the Canadian Securities Administrators warned Canadian investors not to rely on non-GAAP reporting indicators. Included were terms like operating earnings; cash earnings; adjusted earnings; pro forma earnings; and earnings before interest, taxes, depreciation and amortization (EBITDA). Have you ever seen an emerging carrier that didn't rave about becoming "EBITDA-positive"?

The difference between the GAAP numbers and pro forma accounting can be massive. Some companies' GAAP figures are so bad in comparison that a chart cannot be drawn to scale showing both GAAP and pro forma values. Nearly every high-tech start-up would post noticeably worse numbers using GAAP. That's why they don't want to do it. And everybody assumes that's how Enron was thinking.

Then there's hype. How many times has our industry been bombarded with rosy forecasts of hockey-stick growth in some obscure technology market space? Didn't we read that Enron was going to revolutionize networking by trading bandwidth like it trades energy? Gee, I hope not, based on what's now happened.

Why did this hype explosion happen at Enron? Presumably to build the perceived future value of the company and help sustain its stock price. Does anybody think that if Enron executives knew the bottom was going to drop out, they might have said "Gosh, let's go public with

this and let the stock tank so we can be fair in disclosing what's happening"? Does anyone think the latest softswitch vendor, DSL local exchange carrier or metropolitan-area optical equipment vendor is plotting real industry growth and contemplating telling Wall Street, "Our basic value proposition has evaporated and we're essentially waiting to file bankruptcy"? Isn't the behavior we see all too often with hype in our industry a parallel to what Enron's accused of doing?

Then there's politics. On the key issue of broadband reform, every special-interest group from regional Bell operating companies to interexchange carriers to equipment vendors is lobbying Congress, and the Bush administration to take steps to promote broadband. But what steps? The ones that favor the lobbyists' clients, of course. If any of these guys are taking a stand in the public interest, it's a happy accident. A lobbyist is a paid manipulator of the political process. Enron spent millions lobbying. So has the carrier community, on telecom reform alone.

Now regulators at all levels are being buffeted by consumer complaints about Enron's fall. TV news programs parade people who have lost their life savings. How many in high tech have done the same, as one wave of nonsense after another broke on the rocks of market reality?

Enron was an energy trading company but also a network company. It's easy to sit back and decry its behavior as an aberration, only peripherally involved with our sacred space. Rot. Every fault we lay at Enron's feet, every civil liability or criminal behavior we hear suggested, could be applied to many in our industry.

Where's the outcry against vendors or carriers who give us EBITDA numbers? Where's the rejection of pro forma accounting on earnings in networking? Where's the demand for disclosure of the truth in market estimates? Those questions are the critical ones, and if we don't answer them, regulators may show up at our doors in the future.

Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (856) 753-0004 or tnolle@cimi-corp.com.

Every fault we lay at Enron's feet, every civil liability or criminal behavior we hear suggested, could be applied to many in our industry.

Before you throw stones at Enron

Vulnerability-assessment tools edge toward usefulness in large networks.

Holes in your network

By
Mandy
Address

Do you know where the holes are in your network? Vulnerability-assessment scanners can help you find them before hackers do. With these products you can identify many of the major security holes residing in the systems on your network, usually with just a few mouse clicks. Easily identifying weaknesses, coupled with understanding how to correct them, is a significant step toward maintaining a strong security posture.

However, vulnerability-assessment scanners, which have been on the market almost 10 years, still have a long way to go to maturity. Many of these tools report false positives and seem to falsely stand by the idea that the sheer number of identified vulnerabilities — regardless of accuracy — proves the products' overall worth.

Even with these problems, the importance of vulnerability scanners in corporate security infrastructures is ballooning. According to IDC, revenue will grow to \$657 million in 2004, up from \$359 million this year.

Overall, these tools come in two varieties: network-based and host-based scanners.

Network-based vulnerability-assessment scanners focus on identifying issues with services, such as HTTP, FTP and Simple Mail Transfer Protocol, running on systems in a given network. They are ideal for understanding what systems are running on your network, what services are running on those systems and what vulnerabilities exist in those services. Network assessment scanners usually do not provide as detailed information or give you granular control of specific systems as host-based assessment scanners, but they do provide more detailed service and network information. Plus, you don't need to worry about deploying agents on all machines as you do with host-based wares; you define a network to scan, and off you go.

The major players in this market are Cisco's Secure Scanner, ISS' Internet Scanner and Network Associates' Distributed CyberCop Scanner. EEye Digital Security's Retina scanner is quickly gaining ground. We tested the leading network-based scanners (see review, page 52).

Host-based scanners identify system-level vulnerabilities such as file permissions, user account properties and registry settings, and usually require that an agent be installed on any system to be scanned. The agents report to a centralized database, which a user can tap for generating reports and handling administration. Because agents are installed on each system, administrators have more control over the system than with network-based scanners. If you want to maintain detailed, granular control over particular systems, host-based assessment scanners can help. Many of these products can be combined with enterprise policy-management offerings to help ensure system configurations remain in line with defined, corporate security policies. The major players in this market are Symantec's Enterprise Security Manager,BindView's bv-Control and ISS' System Scanner.

But the lines between network-based and host-based assessment scanners are blurring. Many network assessment scanners include functionality once available only on host-based scanners, such as autofix features. Many also include the ability to analyze registry permissions and account properties.

A new angle in the vulnerability-assessment story is the arrival of online assessment services (see story, page 56). These services provide an automated and cost-effective way to stay up-to-date on the

potential vulnerabilities in your perimeter devices. A few of the managed services can even scan internal systems.

As with any growing technology market, new features for vulnerability-assessment tools are on the horizon. Users want improved ease-of-use, one-click updates and better reporting. Vendors are obliging by making user interfaces more intuitive and vulnerability updates quick and painless. For vulnerability updates, many vendors are taking the same approach antivirus companies took by providing Web-enabled updates. Symantec uses its antivirus distribution infrastructure called Live Update to distribute its assessment updates.

For reporting, users want a variety of options. Executive summaries and detailed analysis reports are standard, but users also want differential reports comparing scan results over a period of time. The assessment tools from Harris include this functionality. EEye's Retina scanner will include differential reporting in Version 5.0, due out in a few months. Users also want to export reports to Word documents, PDFs and HTML files. Many assessment products already support this capability and the rest should not be far behind.

Vendors are also looking to boost their products' performance. Currently, many scanners are slow and some cannot even handle Class C IP networks without running on a fairly hefty system (a Pentium III-800-based server with 512M bytes of RAM). With today's scanners, evaluating an entire corporate network is not very feasible on just one system.

There is a growing trend toward using automated "fixes" for identified vulnerabilities. While some administrators may not want to implement all recommended changes, especially on a production system, giving the administrator the option to automatically fix the vulnerability is helpful. If a vulnerability-assessment scanner identifies a registry key with incorrect permissions, one click of the mouse on the autofix button will immediately take care of this issue. Otherwise, the administrator would have to log on to the system, open the registry editor, find the registry key, and change the permissions. Host-based scanners have the advantage in this regard because the agent physically resides on the system and can access many more system resources for the purpose of fixing a security hole than a network scanner can.

Vendors are developing ways for network scanners to accomplish these fixes, though. PatchLink's Update is the most advanced in this area, providing complete patch management and administration. It downloads the patches from its servers and has them ready on your network for deployment. PatchLink does everything for you behind the scenes.

The good news about this growing market is that vendors are paying attention to what users need in an enterprise vulnerability-assessment tool. The combination of assessment and autofix/patch installation is definitely the big trend to watch in this market. Combining these two activities will save your system administrators time and resources. ■

REVIEW

eEye Digital Solutions
Retina beats out seven
other network-based
scanners to win the
Network World Blue
Ribbon Award.
Page 52.

ONLINE

Search for the vulnerabil-
ity-assessment scanner
that fits your network
best with our interactive
Buyer's Guide of products
and services from:
Blindview

Digex
eEye Digital Security
farm9.com
Harris
IBM's Tivoli Software
insecure.Org
internet Security Systems
KaVaDo
Mercury Interactive
Nessus.org

NetIQ
Network Associates
PatchLink
PentaSafe Security
Technologies
SAINT
Sanctum
Symantec
Visualware
DocFinder: 7924

EEye's Retina wins our Blue Ribbon Award for speed and quick-fix feature.

Network scanners pinpoint problems

By
Mandy
Andress

In the past, there hasn't been much good news about the state of vulnerability-assessment scanners. Their reputation has been plagued with false positive reports, lack of scalability, lagging updates and inadequate reporting tools. While some areas still need a bit of improvement, vulnerability scanners have useful tools for helping network professionals identify potential vulnerabilities and security. However, we also found that many of these products may have trouble scaling to fit the requirements of enterprise networks.

In our testing, we reviewed products from eEye Digital Security, Nessus, Symantec, Internet Security Systems, NetIQ, Network Associates, PatchLink and Harris. Cisco and BindView declined to participate.

We evaluated how each identified our network vulnerabilities; what resources it required to run and then scale to a larger network; its reporting tools; what it offered as security recommendations and auto-fix features; and installation and ease of use.

EEye Digital Security's Retina is the Blue Ribbon Award winner. Harris' Security Threat Avoidance Technology (STAT) Scanner was a close second, but it fell a bit short in the ease-of-use category.

PatchLink's Update product was impressive, but its support for Windows-only systems lowered its score. In the near future, PatchLink will support Red Hat Linux, Solaris, AIX and NetWare 5.x, the company says. We were impressed that the vulnerability-assessment aspect of PatchLink Update occurs behind the scenes. The only information you see is the results of the analysis, which informs you of all the patches that need to be installed on each system.

ISS's Internet Scanner and the open source scanner Nessus made good showings. Both provided good analysis overall, but performed slower than STAT Scanner and Retina. And both missed a few more vulnerabilities than the top performers in our test.

Symantec's NetRecon, NetIQ's Security Analyzer and Network

Associates' Distributed CyberCop Scanner had several issues that held them back in our tests. NetRecon performed very slowly and identified vulnerabilities for services and configurations that were not running on the network. While NetIQ identified quite a few vulnerabilities on our systems, it missed the big ones, including one of the major known Internet Information Server 5.0 vulnerabilities. Its performance also lagged when scanning more than a handful of systems.

Distributed CyberCop Scanner takes a good approach to scanning enterprise networks by distributing the load to multiple servers, but its reliance on the ePolicy Orchestrator management console is frustrating.

■ Vulnerability ID

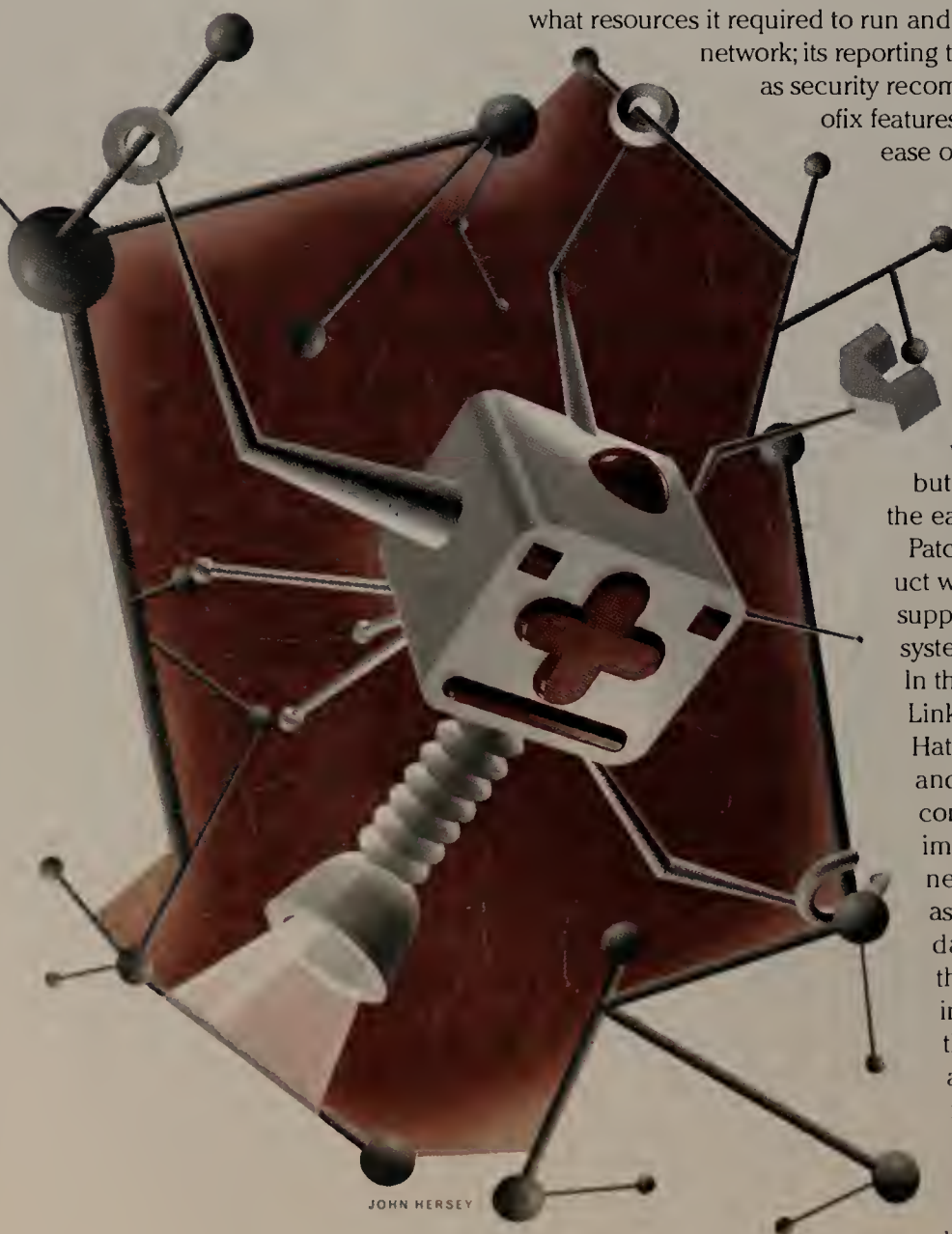
The most important component of our testing checked to see how accurately the scanners identify vulnerabilities. Using our controlled test network (see How we did it, page 56), we selected 15 vulnerabilities we knew existed on the test systems (see the chart at www.nwfusion.com, DocFinder: 7832 to find what vulnerabilities we looked for specifically and whether the product identified them). We selected a combination of Linux and Windows vulnerabilities and a few system configuration options, such as anonymous FTP and allowing null sessions, that do not follow generally defined security best practices. The vulnerabilities we selected covered a range of services, including Windows domain issues, FTP servers, Sendmail servers, Web servers and Secure Shell (SSH) devices.

The results were a bit surprising. All products recommended we disable the chargen/echo service, anonymous FTP, and ability to create null sessions on our systems, which is good. Enabling either of these services and enabling null sessions on Windows systems goes against security best practices.

Retina and STAT Scanner found the most of the 15 vulnerabilities on our target list with Retina missing only two Linux holes (SSH and wu-ftpd) and STAT Scanner missing one Windows (MS01-005) and a few Linux (sendmail, wu-ftpd and SSH) holes. Both products also provided information on important registry key and account policy setting changes. PatchLink Update also identified all the patches that needed to be installed on the Windows systems.

Overall, STAT Scanner provided the most comprehensive and accurate list of the vulnerabilities on our network. STAT Scanner requires a SSH connection to Unix systems and it requires that your administrator have a user ID and password to scan settings. The documentation and graphical user interface (GUI) say this account must have root access, but that is not the case. An ordinary user account works. Future documentation and the next

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JOHN HERSEY



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Vulnerability

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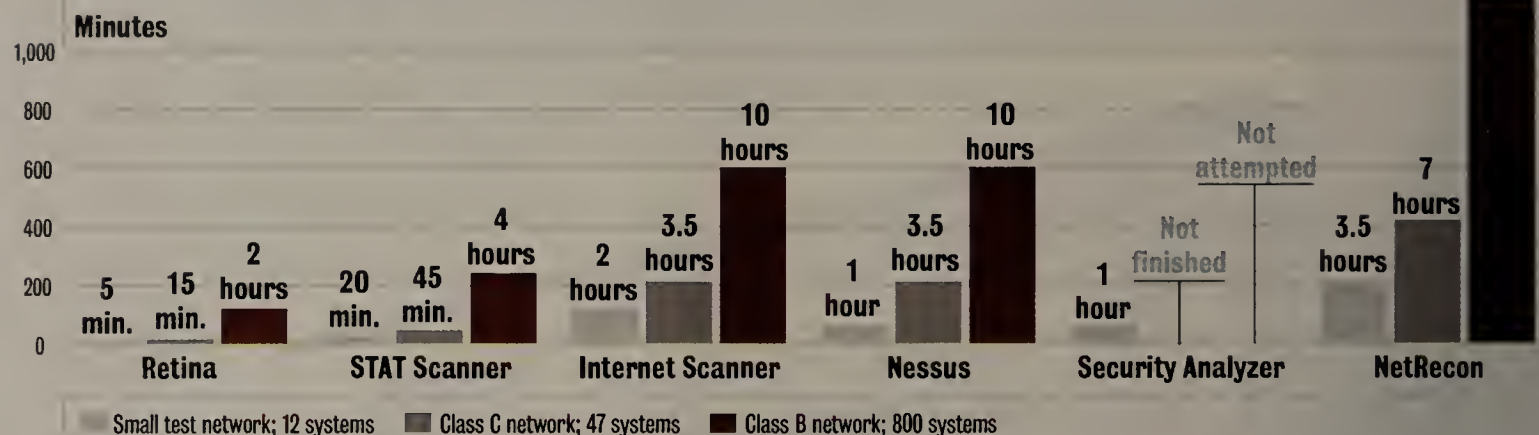
GUI release will correct this issue.

Nessus and Internet Scanner performed well, identifying most of the Linux issues and the major Windows vulnerabilities. NetRecon only identified a handful of our known vulnerabilities and a few that were not even present on the system. For one Linux system, NetRecon told us we had some Apache vulnerabilities, and Apache was not even running on that system. NetRecon also told us our Cisco router was infected with the Girlfriend and Subseven Trojans when they were not present.

Security Analyzer performed the worst, identifying only our configuration issues but failing to accurately report any service-related vulnerabilities. All the 2,065 vulnerabilities identified by the product were host configurations such as file and directory permissions, registry permissions and account policies. Security Analyzer will also not identify Unix/Linux vulnerabilities without an agent installed on the system. Even when we installed this agent, Security Analyzer did not identify any of the vulnerabilities on our list.

Testing scanner performance

Network World Blue Ribbon Award winner Retina, from eEye Digital Security, swept our tests to determine how fast these products could scan small, midsize and large networks for known system security breaches.



Note: We did not include the PatchLink product in this comparison because it requires that agents be distributed to all systems on the network, and the scan occurs as soon as the agent software is installed. The scanning times of the CyberCop Scanner depended on the number of sensors we deployed throughout the test network(s).

Fixing the problems

After identifying the vulnerabilities on each system, these scanners generally provided some tips on how to correct the problems. The autofix feature is where PatchLink Update thrives, providing a comprehensive assessment and patch management feature that lets administrators automate and centralize Windows patch distribution and installation.

While not as comprehensive as the PatchLink offering, Retina and STAT

Scanner provided a means of automatically and remotely fixing some registry and permissions problems. In a future release, Retina plans to offer a means of installing Windows patches.

Internet Scanner does not provide any autofix functionality, but it provides the best step-by-step instructions to fix identified vulnerabilities for Unix and Windows platforms.

For vulnerability descriptions and identification, each product provides different sets of data. Retina provides the most in-

formation, including Bugtraq IDs, Common Vulnerabilities and Exposures (CVE) numbers, and vendor patch numbers where available. ISS only lists the CVE number. NetRecon uses the CERT Advisory number. STAT Scanner uses the Q ID number for Microsoft bulletins, and PatchLink Update uses the Microsoft Bulletin numbers. Comparing the output of all these scanners to identify exactly what vulnerabilities they are describing is a cumbersome and arduous process.

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Net Results

4.30 RATING

Retina 4.7

Company: eEye Digital Security, (866) 339-3732, www.eeye.com
Price: \$5,000 for an unlimited license with a \$1,700 annual maintenance fee.
Pros: Extremely fast analysis; good autofix capabilities; intuitive interface; strong vulnerability identification. **Cons:** Few reporting options.

4.05 RATING

STAT Scanner 4

Company: Harris, (888) 725-7828, www.statonline.com
Price: \$12,500 for an unlimited license with a \$2,500 annual maintenance fee.
Pros: Excellent report options; strong autofix capabilities; fast analysis; strong vulnerability identification. **Cons:** Requires SSH to scan Linux/Unix machines; interface is a little crowded

3.65 RATING

PatchLink Update 3.0

Company: PatchLink, (888) 970-1025, www.patchlink.com
Price: \$1,000 per server and \$12 per agent. **Pros:** Excellent identification of missing patches; installs patches automatically. **Cons:** Only works with Windows systems at the moment; no printed report options.

3.45 RATING

Internet Scanner 6.2.1

Company: Internet Security Systems, (888) 901-7477, www.iss.net
Price: \$9,500 for a 250-node license and a \$1,900 annual maintenance fee. **Pros:** Strong Linux identification; detailed instructions to remove identified vulnerabilities. **Cons:** Interface is not very intuitive.

3.10 RATING

Nessus 1.8.10

Company: Nessus, www.nessus.org
Price: Open source. **Pros:** Very cost effective; simple installation process; good vulnerability identification. **Cons:** No defined signature update schedule.

2.85 RATING

NetRecon 3.5

Company: Symantec, (800) 745-6054, www.symantec.com
Price: \$20,000 for an unlimited license and a \$3,600 annual maintenance fee. **Pros:** Simple installation. **Cons:** Slow performance; poor vulnerability identification; expensive.

2.6 RATING

Distributed CyberCop Scanner 2.0

Company: Network Associates, (972) 308-9960, www.nai.com
Price: \$23 per node up to 500 nodes including two-year maintenance fee. **Pros:** Highly scalable. **Cons:** Difficult to install and confusing to use; poor user interface.

2.4 RATING

Security Analyzer 4.0a

Company: NetIQ, (888) 323-6768, www.netiq.com
Price: \$60 per node for 20 to 250 nodes down to \$31 per node for more than 5,000 nodes. **Pros:** Easy installation process; comprehensive registry analysis. **Cons:** Extremely slow and processor intensive; poor vulnerability identification.

What's the score?

	Retina	STAT Scanner	PatchLink	Internet Scanner	Nessus	NetRecon	CyberCop Scanner	Security Analyzer
Vulnerability identification 25%	4	4	2	3	3	2	3	1
Reporting 25%	4	5	3	4	3	3	3	3
Installation/ease of use 20%	5	3	5	4	3	4	1	4
Recommendations/autofix 20%	4	4	5	3	3	3	2	2
Scalability/resource use 10%	5	4	4	3	4	2	5	2
TOTAL SCORE	4.3	4.05	3.65	3.45	3.1	2.85	2.6	2.4

Individual category scores are based on a scale of 1 to 5. Percentages are the weight given each category in determining the total score. ■ Scoring Key: 5: Exceptional showing in this category. Defines the standard of excellence. 4: Very good showing. Although there may be room for improvement, this product was much better than the average. 3: Average showing in this category. Product was neither especially good nor exceptionally bad. 2: Below average. Lacked some features or lower performance than other products or than expected. 1: Consistently subpar, or lacking features being reviewed.



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- B.V. Jagadeesh, President and CEO, Netscaler, Inc.

INSTRUCTORS

- Dr. Douglas E. Comer, Professor of Computer Science, Purdue University
- Dr. David Clark, Senior Research Scientist, MIT
- François Flückiger, Deputy Leader, CERN
- Dr. Stephen Kent, Chief Scientist, Information Security, BBN Technologies
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Vulnerability

Continued from page 54

For identifying patch locations, Retina and STAT Scanner are again at the head of the class. They provide direct links to the patch location or a link to the program's Web site, such as www.sendmail.org for Sendmail vulnerabilities. STAT Scanner takes this one step further for Red Hat Linux systems by providing direct links to Red Hat's packaged management platform.

■ Reporting

After vulnerability identification, reporting is the next most important feature of any vulnerability scanner. It's one thing to find the holes on the network, it's another to present that information to the user in a timely and organized format. Reporting is fairly standard across the assessment scanners we tested, but a few issues stood out.

All scanners provided at least HTML report output. NetRecon and Internet Scanner provided PDF exports, which is very nice. We would have liked this feature in all the products.

But STAT Scanner offers the widest range of reporting options by providing a long list of potential reports. If there is a specific way you would like the information displayed, STAT Scanner will have the report format available. Internet Scanner and NetRecon also provided a decent range of report options, including executive summaries and detailed technical reports.

PatchLink Update provided online reports detailing what patches are installed on a system and which systems need spe-

cific patches. These reports are only available online, though. We would like to have the option to export and/or print reports.

Security Analyzer's report can be exported to HTML or Word. However, it is cumbersome to review. The information is jumbled and not presented in an easy-to-read format.

■ Installation and ease of use

All the products, with the exception of Nessus, used standard Windows installer programs. After installation, STAT Scanner, Retina, Internet Scanner, NetRecon and Security Analyzer were ready to go. PatchLink Update required agent installations on each machine, and CyberCop Scanner needed to be configured through ePolicy

Orchestrator and have agents deployed to systems that will perform the scanning.

To initiate a scan, most products only needed an IP address, range of IP addresses and domain name to start. System identification is generally built in to the scanner, with the exception of STAT Scanner. This uses a third-party application, What's Up Gold by Ipswitch, to identify systems on the network.

The Nessus installation process went smoothly. We followed the instructions found at www.nessus.org, installing the necessary libraries and then running the Nessus installation shell script.

Retina and Nessus use Nmap, the open source fingerprinting tool, to identify systems running on the network, what ports

are open and what operating system is running. Other scanners use proprietary techniques for identification.

NetRecon, Nessus and Retina did a good job identifying devices on the network, including the NetScreen firewall appliance and its corresponding management server, SNAP Network Attached Storage device, and a Hewlett-Packard printer. STAT Scanner, ISS and Security Analyzer only identified the Windows and Linux systems on the network. They found the active IP addresses for the other devices, but couldn't identify them.

Updating each scanner to identify the latest vulnerabilities was simple across the board. Out of the box, all the products, except Nessus, provided the ability

■ How we did it

For our testing, we configured a 12-system test network that contained a variety of platforms and configurations:

- Red Hat Linux 6.2 default install.
- Red Hat Linux 7.1 default install with firewall.
- Two Windows 2000 Servers — one running Microsoft's Internet Information Server with no service packs and one with Service Pack 2 acting as a domain controller.
- Two Win 2000 Professional systems — one running with no service packs and one with Service Pack 2.
- Windows NT — Service Pack 6a and no hot fixes.
- NetScreen firewall.
- SNAP Network Attached Storage Device.
- Hewlett-Packard printer with jet direct print serve.
- Cisco 2600 router.
- Solaris 8 system.

We identified a list of 15 vulnerabilities on this network and compared scan results to this list (see www.nwfusion.com, DocFinder: 7832 for a list of vulnerabilities used in this test).

Each scanner was installed on a Pentium III-800 dual-processor system with 512M bytes of RAM running Win 2000 Server with Service Pack 2. One note — ISS does not support running Internet Scanner on a Windows Server. Therefore, we ran this product on a Pentium III-500 system with 256M bytes RAM running Win 2000 Professional with Service Pack 2. We did not notice any differences except for the speed. For Nessus, we used Red Hat Linux 7.1 running on a single-processor Pentium III-800 system with 256M bytes of RAM.

We scanned this network with each of the vulnerability assessment scanners and compared the results. For the scan, we ran the most comprehensive option available on the product. For our reports, we generated at least an executive summary and a detailed vulnerability report.

To test performance on a more enterprise level, we attempted to run scans on a private Class C IP network range that contained approximately 47 Windows and Linux systems. We also attempted to scan a private Class B IP network range containing 500 Windows and Linux systems.

Vulnerability-assessment services on the rise

Like most markets these days, the vulnerability-assessment market has a new services-based component.

Using these services, organizations can remotely scan their network perimeter or demilitarized zone to identify known vulnerabilities and security weaknesses. With this approach, networks can be easily analyzed from the perspective of the outside attacker at a much lower cost than hiring a consulting firm to perform a penetration test. The information then can be used to improve the security on those Internet-facing systems. Some services even provide the means to scan internal systems, a task that was previously left to point products like the ones in our review. The leading vendors in the vulnerability assessment services market are Qualys, Vigilante, Foundstone and McAfee.

With these services, scans can be scheduled, by the enterprise user or the service provider, to run automatically, with reports e-mailed to a designated user or stored on a secure server for review. Many reports include a differential analysis to help you see how your security posture evolves over time. Foundstone offers this type of consulting.

Qualys and Vigilante focus on providing just the

assessment-scanning services and then sell that service to other outfits, like consulting firms, who then brand the vulnerability-assessment services as their own. For example, NCC Networks provides vulnerability assessments to their clients using the Qualys scanning engine.

One major benefit of online services is the lack of updates. Because the service provider runs everything, it can develop signatures and updates for new vulnerabilities and automatically include them in the next scan. You do not need to perform any updates. As for the timing of updates, service providers typically have the resources to get a new update deployed within a few hours.

Because these services contain data about your network that any hacker would love to find (it prevents them from having to do all the work), reports are stored in encrypted databases and only accessible with the proper user credentials. While the data must be saved to generate comparison reports, not all services keep individual reports available. Vigilante's SecureScan creates a PDF report that is only stored on their systems for 14 days.

Like their shrink-wrapped counterparts, online vulnerability scanners take different approaches in how they

determine whether a vulnerability exists on a system. Foundstone takes an analytical approach and ensures a vulnerability actually exists on a system before reporting it. This greatly reduces the number of false positives, but it also does not give you the big picture.

Foundstone sacrificed some detailed information, such as general service messages (for example, that Telnet is running on this system) to focus on vulnerability identification. In reporting, most services provide more information on system configuration, such as default Microsoft's Internet Information Server directories. While these are not specifically defined vulnerabilities, they can provide information and avenues of attack.

Other online scanners, such as Qualys and Vigilante SecureScan, use open source tools, such as Nmap and Nessus, combined with in-house developed tools. SecureScan takes this even one step further and combines existing commercial scanner products into an online service.

Assessment services are ideal if you are looking for a hands-free, regularly scheduled scan of your Internet-facing devices; do not want to be concerned with keeping up-to-date with newly identified vulnerabilities; or want a third-party constantly helping you evaluate and monitor your network.

— Mandy Address

to automatically download updates over the Internet. Security Analyzer actually checks each time the product is started and alerts you that updates are available. Symantec's process is the smoothest, using its Live Update infrastructure.

Nessus relies on the Linux community to provide vulnerability updates. Several individuals have written scripts that will go out to the Internet to download and install the latest vulnerability signatures. Once this process is set up, updates can be seamless and automatic.

Update availability varies from vendor to vendor.

They all say they release updates for major vulnerabilities as soon as they are available, which can be a few hours to several days or weeks. STAT Scanner releases new updates on the eighth day of each month. NetRecon releases updates every other week.

Retina has the best user interface with its slick colors and intuitive layout. STAT Scanner provided a lot of functionality in its product, and its interface shows that because it is a bit cluttered with information and small icons.

The Security Analyzer interface is the same as the one used by WebTrends reporting software, so many users may find this product strangely familiar. Distributed CyberCop Scanner uses the ePolicy Orchestrator for management, and was difficult to navigate and use.

The Nessus interface runs in X Windows and is a simple, low-frills application. The PatchLink Update interface is a slick Web-based interface that anyone familiar with any Web-based administration tool will find easy to use.

Retina is lightning fast, scanning our 12-system test network in less than 5 minutes. STAT Scanner also performed well, taking about 20 minutes. Internet Scanner took the longest in our first round of tests, having to be stopped after eight hours because it hung on the analysis of the management IP for the NetScreen firewall. After removing NetScreen from the test, Internet Scanner took two hours to complete.

After testing in our self-contained 12-system lab network, we ventured out into the real world to see how these products would act on more enterprise-sized networks. We started slow, scanning a network with 47 active Windows and Linux systems. Retina still flew through the process, completing the Class C scan in about 15 minutes. Security Analyzer never finished.

After scanning about 20 systems, Security Analyzer overloaded the system resources and could not finish. NetIQ tech support told us we needed more RAM. In our experience, the system necessary to scan a network with the NetIQ product would be much bigger than any organization would be willing to purchase.

We then moved on to a larger private network that contained approximately 500 systems. Retina still proved to be the fastest, completing the scan in a little more than two hours.

Vulnerability-assessment scanners are

improving, but many are still spotty with vulnerability identification, and they have not been developed to efficiently scan large networks.

Retina and STAT Scanner stood above the rest of the crowd, but they missed a few vulnerabilities on our list. As new products are released, it will be interested to see whether vulnerability identification and scalability improve to better

suit the enterprise.

Andress is a network security engineer at TiVo and a frequent contributor to many publications. She has also authored several books, including Surviving Security. Andress is also active on the conference circuit, speaking at Black Hat, NetWorld+ Interop, and numerous other conferences. She can be reached at mandy@arcsec.com

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December 2001

The Top ISP Report

How is your dial-up ISP performing?

■ Is your ISP measuring up? Find out with our Top ISP Report, a joint venture between *Network World* and eTesting Labs' Internet BenchMark service (www.etestinglabs.com). The data at right is for December 2001; each month you can go online at Network World Fusion for the latest data.

The chart at right shows the top dial-up ISPs in the market, and how they performed in eight metrics, as determined by eTesting Labs' Internet BenchMark data. We analyzed 21 ISPs (check out Network World Fusion for the list); if your ISP isn't listed among the top performers, ask them why they're not performing as well as their competitors.

Top ISPs profile, December 2001 *Network World* analysis

National retail

AT&T WorldNet • Wins in a squeaker, with a strong EarthLink in a close, close second.

Regional retail

PacBell • Very strong showing in key categories makes this a winner.

Business-to-business

McLeodUSA • Very good overall performance in all categories.

How we did it

Our data comes from eTesting Labs and its Internet BenchMark division. *Network World* takes the data and applies statistical analysis to rate the relative performance of each ISP compared with the other ISPs within the same market classification (national, regional or business-to-business ISP). Based on that analysis, we rank the top ISPs for the month listed. The chart on the right lists the top three ISPs that performed best in the average for the metrics tested within that classification.

	National	Regional ISPs	B2B ISPs
Initial modem speed ■ Measurement of the negotiated connection speed to your ISP once the call has successfully gone through. <i>Average for market:</i>	AT&T Verizon-West Broadwing 49.07K bit/sec	Verizon-East BellSouth Qwest 49.06K bit/sec	AT&T (GNS) Sprint Genuity 49.07K bit/sec
Average time to log on ■ Reflects the time taken to connect and authenticate to a provider network access server once the modem takes the line off-hook. <i>Average for market:</i>	AT&T EarthLink Prodigy 30.26 seconds	BellSouth Ameritech SBIS 31.06 seconds	AT&T (GNS) Sprint Genuity 28.61 seconds
Average download time ■ The time taken for the Web page to download, including all page content. Calculated by measuring the time from the first HTTP TCP packet being sent to the server until the last HTTP TCP connection has terminated. <i>Average for market:</i>	Compuserve AOL 25.57 seconds	PacBell BellSouth SBIS 5.14 seconds	Sprint McLeodUSA AT&T (GNS) 26.41 seconds
Average DNS lookup ■ The time from sending the first DNS query until a response is received from any query. This reflects the end-user perception of the DNS resolution time, including retries. <i>Average for market:</i>	AT&T Prodigy EarthLink 501.72 msec	PacBell SBIS Qwest 436.10 msec	McLeodUSA WorldCom AT&T (GNS) 600.82 msec
Average Web throughput ■ The effective transfer rate of the connection. The average of these Web throughput measurements is presented in the reports. Throughput does not necessarily reflect the bandwidth of the connection, but rather the effective Web throughput experienced using a connection. <i>Average for market:</i>	Prodigy Broadwing AT&T 4.97 byte/sec	PacBell SBIS Qwest 5.14 byte/sec	McLeodUSA Sprint 5.36 byte/sec
Evening-hour call failure rate ■ How often a modem call to the provider gets through successfully during evening hours. A failure would include a busy signal, ring no answer, modem problem or logon failure. The lower the CFR, the better. <i>Average for market:</i>	EarthLink AT&T Verizon-West 5.1%	Verizon-East BellSouth SBIS 2.6%	McLeodUSA Genuity/Sprint (tie) 1.7%
Business-hour call failure rate ■ How often a modem call to the provider gets through successfully during weekday business hours. A failure would include a busy signal, ring no answer, modem problem or logon failure. The lower the CFR, the better. <i>Average for market:</i>	Verizon-West MSN AT&T 5.7%	Verizon-East BellSouth Ameritech 4.8%	WorldCom AT&T (GNS) McLeodUSA 2.9%
Average total Web fail/timeout ■ Any error message that appears as a dialog box for the Internet Explorer browser is considered a Web page failure. Any download that takes longer than 4 minutes to complete is canceled and considered a Web page timeout. A low percentage is considered better. <i>Average for market:</i>	Verizon-West Broadwing/EarthLink/Prodigy (tie) .3%	BellSouth/PacBell (tie) SBIS 1.1%	AT&T (GNS)/Sprint (tie) McLeodUSA .4%

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■ BY LAUREN GIBBONS PAUL

CAMBRIDGE, MASS. — As she headed into a two-day seminar on the fundamentals of finance, Cheree Rumley looked forward to a review of some of her favorite subjects: net present value, internal rate of return, EBITDA. You see, Rumley is a lot more business-savvy than most IT executives. In addition to undergraduate and graduate degrees in electrical engineering, the project manager has an MBA.

Before starting her position with Cingular Wireless in Atlanta, Rumley attended the financial seminar to brush up on her financial acumen. "I feel it's important to understand all the different aspects of business. I didn't want to just understand systems and IT," she said.

Rumley and more than 50 others gathered with coffee cups and Hewlett-Packard calculators in hand on Dec. 12 at the Hyatt Regency for a sem-

inar called "Fundamentals of Finance for the Technical Executive." Led by Professor David Scharfstein of the Massachusetts Institute of Technology Sloan School, the crash course aimed to familiarize IT executives and other technical professionals with financial concepts so they could better communicate with their companies' CFOs.

"We're going to help you learn to put together convincing financial business cases," Scharfstein said, adding alarmingly that the seminar would cover his entire Sloan School finance fundamentals course in two days.

Most attendees had much less exposure to financial concepts than Rumley. "I just want to be able to track the conversation, not understand how to

really apply this stuff," said one attendee. However, Rumley's new job will require her to cost-justify projects. "You have to understand how a project adds value from a return on investment point of view," she said.

The first day was spent learning how to read a public company's income statement and balance sheet. (No, they're not the same thing. The balance sheet is a snapshot of a company's performance at one

point in time. An income statement records the flow of resources over time.) Deciphering these statements is an important way to judge a company's performance and to determine whether it is faring better than competitors.

The second day of the seminar was devoted to evaluating the financial merit of a project or a company. Many attendees seemed excited at the prospect of gaining valuation and estimation tools they could bring home to wow the bean counters. However, the bad news is that calculating a project's worth is highly complex. A back-of-the-envelope calculation of return on investment is not likely to satisfy your CFO or controller.

Calculating a project's value using an established metric such as net present value (NPV) or internal rate of return (IRR) is a complicated process requiring a boatload of financial data, many critical assumptions and a good engineering calculator. You cannot begin to calculate NPV without first knowing how to calculate the discounted cash flow (DCF) value of the money the project will cost. The principle is that a dollar today is worth more than a dollar tomorrow, and the "discount rate" is the variable by which you reduce a dollar's value depending on when the project will take place.

The NPV is the present value of revenue associated with the project minus the present value of outgoing cash associated with it. It's really a measure of how much money a project or acquisition is expected to bring to a company. The actual calculation is incredibly complex. One easy rule of thumb: To extract the most value for the shareholders, a company should undertake positive NPV projects and avoid negative NPV projects.

Say you're trying to make the case to upgrade from Windows NT to Windows 2000. Whether you should undertake the project will depend on if the net discounted cash flows from the project are positive or negative. Hypothetically, let's say it would cost \$1 million today for the company to undertake the upgrade. Assume the project will return a half-million dollars in one year and then another \$600,000 in two years. Is this a good investment?

If the opportunity cost of having the \$1 million tied up for the one-year duration of the project is 10%, then the net present value of the project would be \$-.05 million. Given that the NPV is negative, this is not a good investment.

With an MBA under her belt, Rumley wasn't scared off by any of these concepts or equations. In fact, the seminar served as a useful refresher for theories and tools that she expects to use every day in her job. "I interface with the finance department all the time, and I need to speak their language," she says.

Rumley advises all IT managers to attend a seminar such as this one.

"You really need to know the basics," Rumley says. "You can't be so strictly focused on the systems and not the bottom line."

Gibbons Paul is a freelance writer in Waban, Mass. She can be reached at lauren paul@mediaone.net.

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- **Discounted cash flow:** Method of evaluating long-term projects that factors in the value of money over time.
- **Internal rate of return:** The discount rate at which a project's net present value equals zero.
- **Net present value:** Present value of cash inflows minus present value of cash outflows; measure of how much wealth an investment will bring.

SOURCE: ANALYSIS FOR FINANCIAL MANAGEMENT, ROBERT HIGGINS, IRWIN MCGRAW-HILL

Project Manager Cheree Rumley of Cingular Wireless says her finance background has given her an IT edge.

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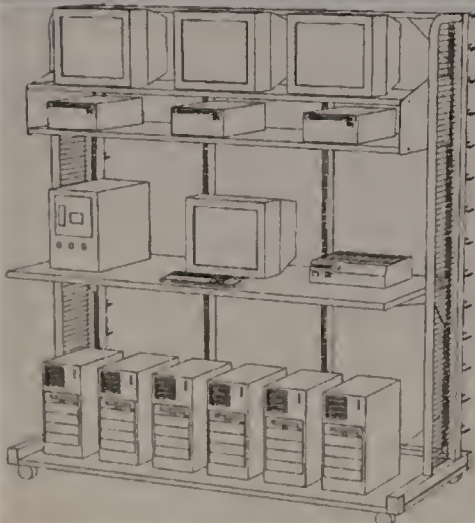
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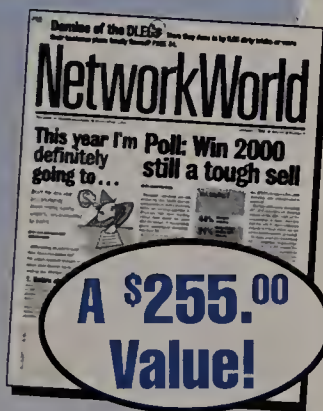
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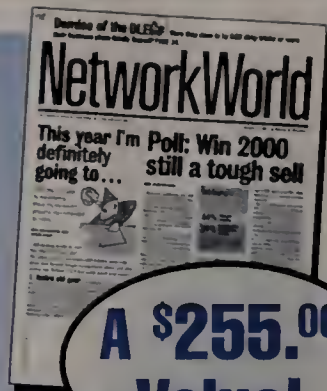
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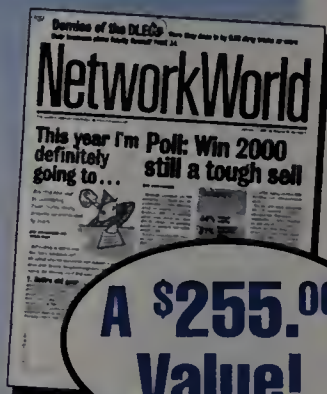
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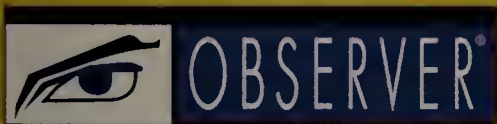
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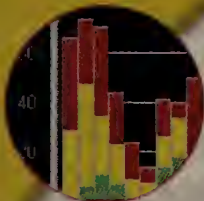
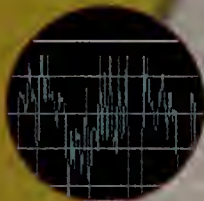
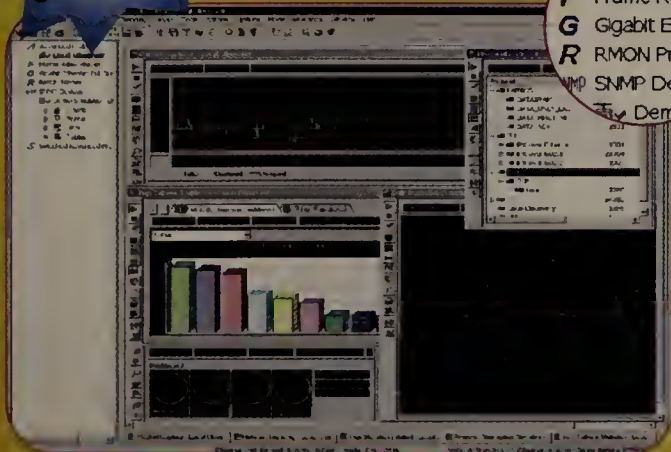
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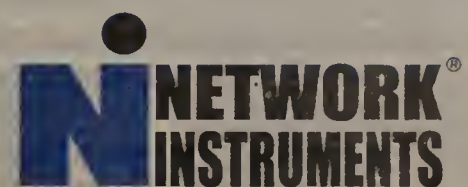
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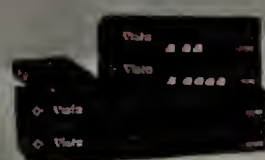
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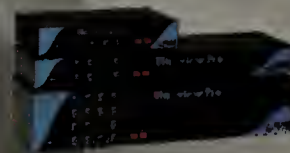
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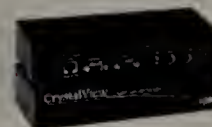
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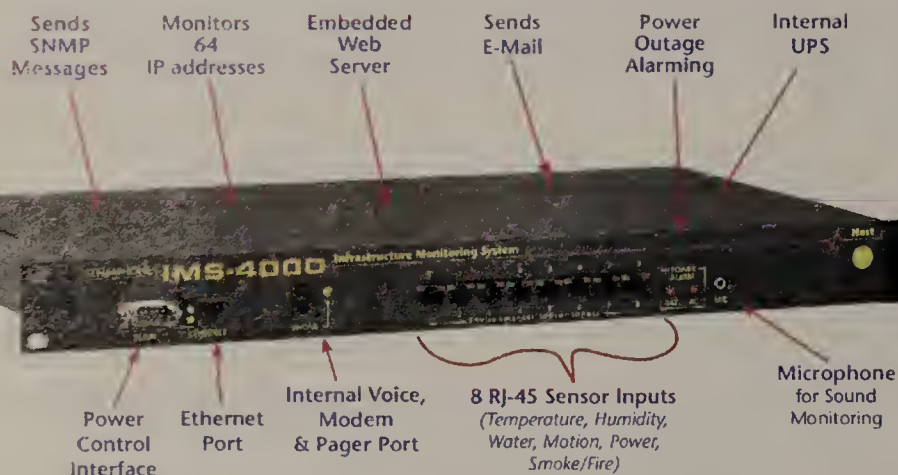


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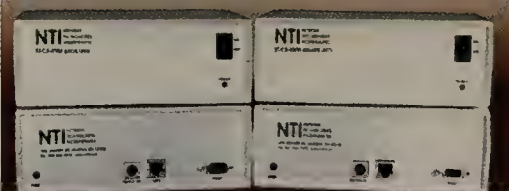
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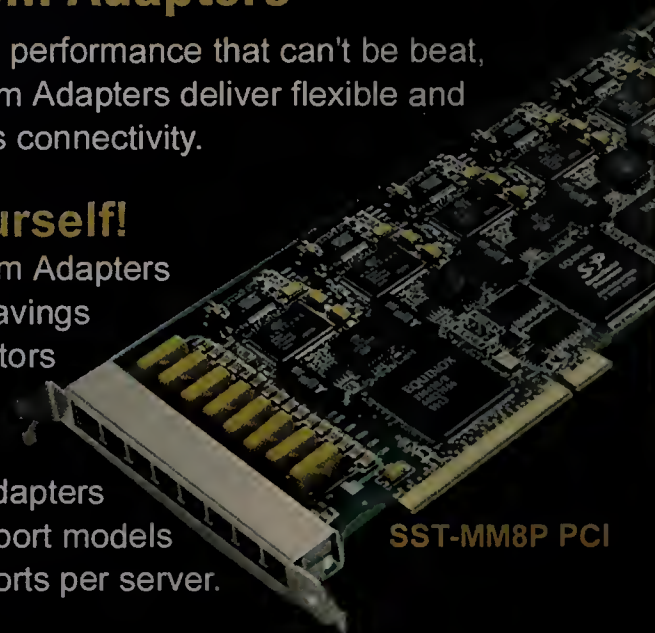
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Tel: 800.622.1108 ext. 6469 Email: kzannotti@nww.com
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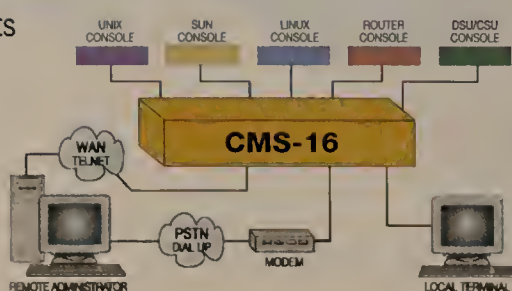
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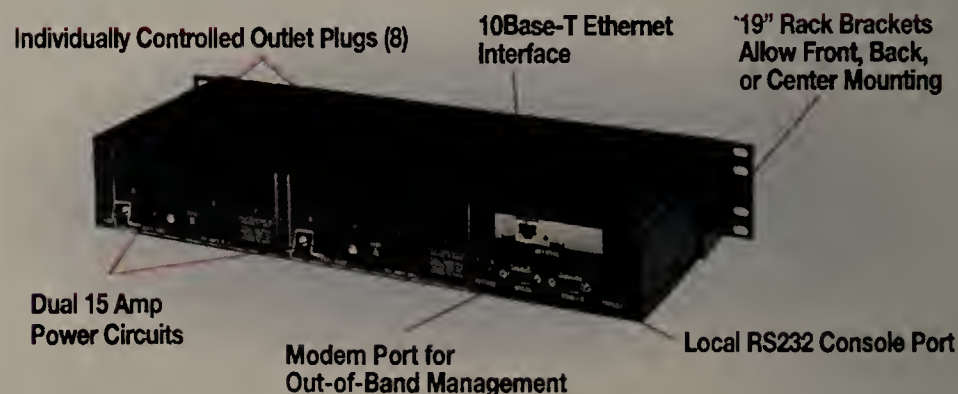


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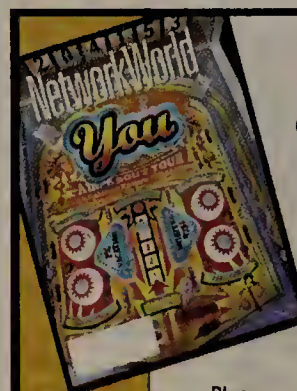
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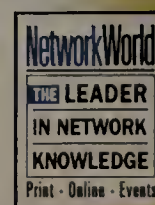
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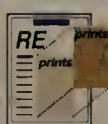
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VoIP

Continued from page 1

Internet access and private IP frame relay customers this year.

When WorldCom launched the service last year, the carrier said it was using SIP for call set-up and termination, but was not ready to roll out SIP support to the desktop.

The University of Pennsylvania tested IP Communications and the SIP phones as part of an ongoing study of integrating existing telephony equipment into a voice-over-IP environment.

"We did test the Cisco 7960 and Pingtel xPressa phones. Both were well received by users, and there were no noticeable ergonomic differences or differences in call quality with either product," says Steve Blair, senior network engineer at the university.

Blair says he was "most impressed with the quality of the technical support" when he was testing IP Communications. While the beta test ended late last year, Blair still is weighing his voice-over-IP options.

"The key benefit of SIP is its interoperability with the [public switched telephone network (PSTN)]," says Lisa Pierce, an ana-

WorldCom talking VoIP

Plans for WorldCom's IP Communications voice-over-IP service include:

- Enhancements that will let customers integrate voice directly onto a LAN.
- Support in March for native Session Initiation Protocol.
- Q2 target to make IP Communications available to all dedicated Internet-access customers.
- Q3 goal to integrate voice-over-IP offering into dedicated IP VPN and private IP services.

lyst at Giga Information Group. The signaling protocol efficiently hands off traffic between an IP network and the traditional telephone network, especially compared to other voice-over-IP protocols such as H.323. It's a positive development that WorldCom is moving ahead with native SIP support as more companies, such as AOL Time Warner and Microsoft, get behind the protocol, she says.

Although WorldCom is not the first service provider to offer users voice-over-IP support, it is believed to be the first in the U.S. to offer managed SIP-enabled voice-over-IP services to the desktop. AT&T also offers voice-over-IP support for its managed Internet access and frame relay cus-

tomers, but AT&T uses H.323 signaling technology.

"Native SIP support will allow new sites to set up a traditional phone system, from a feature perspective, without investing in a PBX," says Barry Zipp, senior director of enhanced voice services at WorldCom. "This will lower the cost of new site implementation dramatically. New site setup [with native SIP support] is half what it would be with a PBX system."

Users can expect this type of savings when setting up an office with about 250 or more employees, Zipp says.

"To support native SIP you have to replicate and enhance the functions that are resident in a PBX or Centrex environment," which is what WorldCom is doing,

he says. Business users can expect features such as call forwarding, call transfer and four-digit dialing.

WorldCom also plans to launch a number of SIP voice applications, including voice mail. The carrier is deploying SIP voice mail servers from Webley on its vBNS+ network, where all IP Communications call signaling and hand-offs to the PSTN takes place.

Although WorldCom initially planned to move IP Communications support over to its commercial Internet backbone, Zipp says the carrier will continue supporting the service on the vBNS+ network for the near term. This network was developed for the academic community and supports advanced technologies such as IPv6.

"The vBNS+ network has interconnections into all our data networks. It might not be the most efficient setup, but right now it lets us get to the other networks and we're not seeing any delays," Zipp says. The question of efficiency comes into play when WorldCom rolls out IP Communications services to its Internet access and IP VPN customers.

WorldCom expects to announce in the second quarter IP Communications support for its

managed dedicated Internet access customers. If IP Communications signaling and application support were deployed on WorldCom's legacy UUNET backbone, an Internet-access customer's traffic would not have to traverse a second network, the vBNS+ network, before it reaches the PSTN.

In the third quarter WorldCom also will roll out IP Communications support to its dedicated IP VPN and Private IP frame relay customers. This support will let customers integrate voice directly onto a VPN by using an existing PBX or by going for a complete overhaul and deploying SIP-enabled phones on each user's desktop.

Zipp says WorldCom is developing an IP Communications service for small and midsize businesses, although price considerations remain an obstacle there.

"The SIP phones are still fairly expensive. Some vendors are getting them down to the \$100 range, but the phones from Cisco and Pingtel are significantly more expensive," Zipp says.

WorldCom hopes to get an IP Communications service that will run over DSL ready by year-end, he says. ■

Redline

Continued from page 15

multiple sessions per page.

With T/X devices, the servers download the pages to the T/X over a 100M bit/sec Ethernet link using a single TCP session. Once it has the page image, the T/X shrinks it using the type of compression supported by the requesting browser. It also weeds out data that the browser does not need to build the page. This process reduces the volume of data to be sent, requiring less Internet-access bandwidth.

Over time, as a Web site draws more hits, T/Xs can stave off the need to add more server hardware, again saving money in capital outlay and management.

"The more machines you have to administer and operate, the more your costs go up," Christy says.

The T/X 2400, which costs \$20,000 supports up to 64 clusters of servers, with 32 servers in each cluster. A smaller version, T/X 2100, costs \$10,000 and serves one cluster of 32 servers. ■

ComNet

Continued from page 14

said the company should soon have access to even more resources given that Verizon, which owns 9% of the company, is expected to increase that share to 80% after clearing certain regulatory hurdles.

In another exchange, WorldCom's Crabtree asked how Equant could get by with just a 155M bit/sec backbone, while others, including her company, boast a 10G bit/sec core. Equant's Maarleveld seeks only the largest international customers, whose individual needs are high but that, in sum, don't represent an enormous bandwidth drain. Equant does not sell to other car-

riers or hoards of consumers, so its backbone needs are relatively modest, Maarleveld said. "We see no reason to buy a lot of backbone we don't need," he added.

Sprint, WorldCom VPN news

Outside of the debate, Sprint and WorldCom announced new VPN services.

Sprint said it is using Cosine Communications gear to deliver a new managed network-based VPN service, slated for availability in the second quarter.

The service will protect customer traffic inside IPsec tunnels once it reaches Sprint's network, although traffic will run unprotected between customer sites and Sprint points of presence. Sprint claims the service will be easier for it to manage than its existing managed VPN service because the carrier can support many customers from each Cosine device. While Sprint wouldn't reveal how many sites it can support via the new service or how much it will cost, it said the offering should appeal most to companies looking to build out large VPNs that would be too difficult to manage and too time-consuming to roll out themselves.

Sprint's existing managed VPN service relies on equipment placed at each customer site, protecting the access links between customers and Sprint POPs, but increasing the number of machines Sprint must manage to deliver the service.

Separately, WorldCom announced a way for customers of

its IPVPN Dedicated Access, Fully Managed service to measure the latency, usage and reliability of their VPN connections. These reports are available in daily, weekly and monthly Web-based reports via a new service called VPN Interactive Performance Reporting (VIPeR). There is no extra charge for the service. ■

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BorderManager

continued from page 1

vell Directory Services Authentication Services (NDS-AS) and Novell Account Manager (NAM).

SecureLogin provides single sign-on capability for Windows, Web and host applications; iChain allows authentication into the network from outside networks; eDirectory organizes and stores individual identity information and access rights; NMAS enables biometric, smart card, digital certificates, tokens and proximity card authentication; and NDS-AS and NAM synchronize user information from other operating systems into eDirectory.

Greg Bernard, a financial analyst for Midwest Capital Markets in Kansas City, Mo., says the focus is right.

"It is an excellent idea," Bernard says. "Novell is on the right track, especially with what we've seen with viruses and other network intrusions in the last year. If the company can provide secure networking on the Internet, extranet and intranet, that's a tremendous market for them to go for."

Users say security is a natural extension to Novell's NetWare, GroupWise, ZENworks and Portal Services products.

"By being a directory service vendor, Novell by default is a security company," says Rocco Esposito, CTO of window-covering manufacturer Hunter Douglas in Upper Saddle River, N.J.

Esposito says that while the security focus is good, Novell shouldn't try to fill in the gaps by developing products, but should acquire them from vendors such as Symantec or McAfee.

Novell's Secure Access bundle is strong in single sign-on, metadirectory services and password management capabilities, but lacks antivirus, intrusion detection, auditing and centralized administration software, observers say.

"Intrusion detection is fast becoming an absolute must for network security, and soon the BorderManager firewall product will be seen as lacking if it doesn't include an [intrusion-detection system]," says Ron Diebert, network and systems manager for the Baltimore County Government in Towson, Md.

Novell Secure Access

Security suite includes seven products:

Components	Function
BorderManager	Content, packet filtering, caching, firewall, VPN, Internet access
SecureLogin	Single sign-on for applications
iChain	External authentication
Modular Authentication Service	Biometric, smart card, digital certificates, tokens and authentication
eDirectory	Organize and store individual identity information and access rights
Account Management	Synchronizes NetWare, Win NT/2000, Solaris, Linux information into eDirectory
NDS Authentication Service	Synchronizes OS/390 Unix, Linux, AS/400 user information into eDirectory

Competition for Novell's Secure Access is also broad, but so is the market. IDC expects sales of authentication, authorization and administration software will grow from \$2.8 billion in 2000 to \$9.4 billion by 2005. Single sign-on products, of which Novell holds a 30% market share, will represent a significant portion of the market, IDC predicts. Computer Associates' eTrust leads the overall security software market

with 15.5% of sales, followed by IBM/Tivoli Systems' SecureWay with 11.2%.

There are a number of software companies with specialized products that could undercut Novell's security push, including Netegrity's Secure Relationship Management single sign-on product, NetIQ's Administration Suite and CacheFlow's Server Accelerator proxy cache appliance.

Meanwhile, Novell developers are working on a version of BorderManager that starts to bring it up to snuff with other products. They will add Web-based configuration of packet filters, virus pattern filtering, a client for Windows XP and Millennium Edition, and a personal firewall to Version 3.7.

Users, who realize that protecting a directory and its user identity and access rights should be the primary function of any security product, say these changes are long overdue.

Even though "BorderManager's key strength compared with other firewall, proxy, VPN software has always been its directory integration, the current version was starting to lag behind other vendors' [product] features," says Michael Ducharme, IT manager for the Anokiwin Training Center in Winnipeg, Canada. "Also, I was concerned that BorderManager 3.6 configuration and management would still be done via the aging [DOS-like] console interface, while administration for all other Novell software has since moved to [the Web]."

For the foreseeable future, BorderManager will remain NetWare-based, although future versions will remove its dependency on NDS eDirectory and work with any Lightweight Directory Access Protocol-compliant directory, Novell says. The company also says that buyers of security suites often don't purchase every component and therefore may not mind that BorderManager only works on NetWare servers. A customer may choose to replace BorderManager with a firewall from Check Point Software or a single sign-on product from Netegrity.

Some users even say it's not necessary to port BorderManager to other operating systems' platforms.

"The functionality of BorderManager is appliance-like and in an appliance it really doesn't matter what the base [operating system] is," says Chip DiComo, manager of global information systems for transportation firm Hellman Worldwide Logistics in Miami. A BorderManager server could easily be placed in a Windows NT/2000 or Unix network as an edge device, where it would provide firewall, VPN or packet filtering services, DiComo says. ■

NetIQ keeps up with Web traffic scalability

■ BY ANN BEDNARZ

ORLANDO — On the heels of naming a new leader, NetIQ is set to offer updated Web analysis software that crunches Web visitor data five times faster than earlier versions.

CEO Charles Boesenberg succeeds company co-founder Ching-Fa Hwang, who is retiring from daily operations but retains the chairman's seat. Boesenberg took over just in time for the company's NetConnect 2002 user conference, where NetIQ's WebTrends division is unveiling its revamped — and renamed — high-end Web analytics suite.

Highlights of WebTrends Intelligence Suite (WIS), formerly known as CommerceTrends, are its improved performance, data integration tools and reporting options. According to the company, WIS can process and analyze Web data five times faster than its predecessor. Behind the performance gains are algorithm adjustments that let the software more efficiently extract and stitch together visitor session information from multigigabyte log files, which record events sequentially rather than per visitor.

The performance increase in WIS is important, says Guy Creese, research director at Aberdeen Group. Along with competitors NetGenesis and Accrue Software, WebTrends faces a constant battle to keep up with enterprise scalability demands as Web traffic increases, Creese says. At an active site, traffic

can grow 50% every six months, he says.

New integration tables included in WIS aim to make it easier to share data with other sources, such as call center software, to correlate Web-based and call center activities.

A new custom reporting module bundled in WIS is based on Crystal Decisions' reporting technology. The WebTrends Report Designer supplements 350 predefined reports and a high-end reporting tool called WebTrends OLAP Manager. Where WebTrends Report Designer is limited to two variables, the online-analytical-processing-based reporting engine lets users map multiple variables — such as the number of Web site hits from users in New England who responded to a particular marketing campaign between 6 p.m. and midnight.

For even more sophisticated data analysis, NetIQ is partnering with Quadstone, which makes predictive modeling and data mining software. The deal is aimed at businesses that want to merge customer data from their Web sites and offline sources for a view of historical data and future buying trends.

WebTrends' competitors in the high-end

analytics market have made similar moves. Accrue licenses data-mining technology from NeoVista (a company it once owned but sold last year to JDA Software). NetGenesis partnered with — and since November is owned by — data mining and predictive analytics company SPSS.

Where the three competitors differ is in the breadth of their Web analytics offerings, Creese says. Accrue offers a midrange product in addition to its high-end suite; NetGenesis only serves the high end, he says. Only WebTrends has a full soup-to-nuts lineup, Creese says.

WIS is available now starting at \$30,000. Quadstone for WebTrends pricing is not yet available.

Meanwhile, the company also will announce its NetIQ SQL Server Management Suite, which is the company's first foray into database management. Configuration Manager for SQL is a new product the company says helps track configuration changes. NetIQ also will begin reselling its Recovery Manager for SQL Server as a result of a reseller agreement with Lumigent Technologies. The software will provide real-time analysis of SQL transaction logs. The suite also includes NetIQ's AppManager for SQL Server. The products are slated to be available in March or April.

Staff Writer Denise Dubie contributed to this story.



New NetIQ CEO Charles Boesenberg.

BackSpin Mark Gibbs



Opening a can of dongles

"Just another thing that won't work, to add to software that doesn't work, hardware that doesn't function, and service people who have no clue. Just one more thing to separate me from the machines and their effective use. Just one more thing to be made obsolete by the 'upgrade' of any one component. The very thought of the return of dongles makes me long to live in a Third World country. At the moment, starvation looks preferable although I would doubtless change my mind when it was too late."

— e-mail from Jane Axtell

"I am not generally amused by people who tell you why you should be happy when they commit crimes against you. Piracy is wrong. But software manufacturers have the ability to copy-protect their software and choose not to. Their words say it's a big problem; their actions say it is not. And if they don't care, I don't care. With [Windows] XP activation, Microsoft is now saying that it cares, as is its right. Microsoft is also saying take it or leave it, as is its right. Perhaps some users will opt for a competitor's product, which does not require activation, and Microsoft's sales will suffer. That is all Microsoft's risk to take, as it sees fit. They don't need my help in figuring out how to make money."

— e-mail from "one reader"

Wow! Did I open up a can of worms or what with my column suggesting that dongles might be a better antipiracy mechanism than the likes of Microsoft's Product Activation system? For those of you who missed it, check out "Let's do IT with a dongle" (www.nwfusion.com, DocFinder: 7942).

I haven't had a chance to count the yeas and nays, but it appears that it is roughly a 50-50 split on the fundamental question of to dongle or not to dongle.

In the barrage of mail, some interesting themes emerged... that is, themes other than "you are a running dog of capitalism" and "rot in hell, heretic."

A major theme was dongles won't work. One reader wrote with the weight of experience: "As a user of dongles in the past, I know that someone has to manage them, create them, correspond a particular dongle to a particular software instance and provide customer support for lost or damaged dongles."

I absolutely agree, the old dongle technologies were neither reliable nor particularly practical. But I wasn't suggesting a return to what we used to use, I was suggesting that we need new standards and technologies to make dongles practical. (Oh, and by the way, thanks to all who corrected me on Autocad's use of dongles — they gave it up some time ago.)

Several readers who seemed in favor of donglism suggested that a smartcard technology would make

sense, particularly if multiple access codes could be merged onto a single card.

But where things got really interesting was in the thoughts concerning piracy and how to prevent it. One reader had this to say: "Your closing comment refers to the requirement of a rational, ethical user group. If the bulk of the users were rational and ethical then what would be the point of the dongle? To punish the majority for the sins of the few?"

This misses the point. The software vendors aren't trying to "punish" anyone. They are trying to prevent misappropriation of their intellectual property. And the requirement for rational and ethical users was to support the adoption of an effective software protection system, not to underpin the system's functioning.

Basically, if more of us said that we understood the need for software protection, that we would accept its use and we would collaborate on the underlying technology and market framework, the goal of significantly minimizing piracy could and would be realized.

Darn, I've run out of space before I could tackle the biggest issue of the lot so, next week, the ethics of making software and furniture.

Dongle dangling to nwcolumn@gibbs.com.



'NetBuzz News, insights, opinions and oddities

Paul McNamara

Taking security to the next level

Back at the daily newspaper where Buzz worked before joining *Network World*, there was a particularly painful lesson we learned the hard way: Readers forgive few sins more grudgingly than a misprint of the winning lottery number.

Imagine thinking you'd won a bundle, only to learn that the paper screwed up. Worse yet, imagine

tossing a winning ticket in the trash.

Or imagine you were in charge of Web site security for the Texas lottery, which was recently defaced by hackers. Think you'd want to check those winning numbers right away to make sure no one messed with them?

There was no serious damage this time, but executives at KaVaDo, a New York start-up, use the recent Texas episode in pitching their message that comprehensive network security requires attention at the application layer.

"You don't need to be technically savvy to hack an application," says Tal Gilat, co-founder and CEO.

Gilat drives the point home in a demonstration of how easy it can be to compromise a poorly conceived username-and-password system. He says they pulled the same trick while making a sales presentation to bank executives — on the bank's Web site — and watched as "their faces went white."

KaVaDo's products — a vulnerability assessment tool called ScanDo and an intrusion-blocking system called InterDo — provide an extra layer of expense in addition to added protection, but Gilat says he's gotten little push-back on the \$15,000 prices.

He got none from those bankers.

It's 'My Party' and I'll cry if I want to

'Chicken Little' may be the patron saint of antivirus software vendors, but that didn't stop Buzz from taking a quick peek skyward after reading about the "My

Party" virus circulating last week.

Who wouldn't be unnerved by a virus that masquerades as a simple URL?

And shortly after reading about "My Party," what pops into my mailbox but a missive from *Network World*'s crackerjack help desk with the subject line: "Virus Alert — new photos from my party!" ... It included a URL that promised me more information about the threat.

Hmm, to click or not to click, that was the question.

This time the e-mail really was from our help desk. What if next time it isn't? ... Have you glanced outside yet?

Getting the rank-and-file to resist temptation and avoid opening executable attachments has proven daunting enough.

Training users to avoid infected URLs might be harder than teaching them Chinese.

Spam by any other name . . .

Mobile phone users really don't mind receiving text advertisements via Short Message Service, according to a survey commissioned by those impartial social scientists at the Nokia mobile phone company.

A press release about the survey claims that 86% of 3,300 phone users polled in 11 countries "said they would accept 'some advertising' if it helped keep the cost of mobile services down."

Well, at the risk of sounding Clintonian, doesn't the question ultimately depend on the definition of "some"?

If we're talking one or two advertising messages a day in return for a 25% discount, then where do we sign up?

But, if we're talking about anything like the levels of spam flooding my various in-boxes — in exchange for a nebulous promise of lower service fees — then that 86% figure means less than a carefully parsed presidential denial.

Spam by any other name still smells like low tide.

The address is buzz@nw.com. No soliciting.

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